

Crowther-Hunt critics condemned by Peston

by David Walker

The universities' reply to questions posed last year by Lord Crowther-Hunt about their efficiency and the need for manpower planning was petulant and inadequate, Professor Maurice Peston of Queen Mary College, London, and former adviser to the Department of Education, has written in the spring edition of *New Universities Quarterly*. "If the various spokesmen for our universities feel that the best way to respond to a Ministerial initiative is to accuse him of being naive and simplistic, that is a matter for their own judgment, but they might at least show some responsibility in offering a more subtle and sophisticated alternative. 'Outrage, coupled with a desire for further compromise, is scarcely what the country needs or expects from the universities.'"

In his article, entitled "The education of vice chancellors", Professor Peston replied to a previous piece by Sir Alec Merrison, vice-chancellor of Bristol University, which he called "a polemic on Lord Crowther-Hunt, until recently the Minister of State overseeing higher education. Professor Peston reiterated some of Lord Crowther-Hunt's questions and strongly defended the Ministerial initiative.

He argued that Lord Crowther-Hunt's remarks on manpower planning were made in the spirit of the Robbins Report, and added that the DES on teacher supply, were accurate; there was good cause for trying to spot trends.

Value of overseas student research work emphasized

by John Ross

The argument against "subsidizing" postgraduate students from overseas took no account of the value of their research work, Dr Edward Edwards, vice-chancellor of Bradford University, has said.

In his annual report, presented last week to the council of governors, Dr Edwards said: "Like all universities, we value the contribution of overseas students to the long term and the factual knowledge discovered must be made available to the international 'scientific' community, though the country of discovery always has a massive 'potential' advantage in the practical exploitation of the research."

"It was impossible to put a figure on that value, he said. Fundamental results were usually always obtained by 'international' teams of staff and postgraduates. A country which could attract international postgraduates could gain much more than it gave, as long as its industry had the capacity to exploit scientific advances.

Many key industries did not have enough trained personnel in technological and production management. Potential British postgraduate students and their financial incentive to spend three years on advanced studies.

To disburse overseas postgraduate would reduce the research effort of the universities in science and technology. "Ultimately we arrive at a state where not only is our industry and economy weakened."

Students and staff unite on grants

The Senate and students' union at Kent University have joined together to press the Government to release student maintenance grants.

In a joint letter, Dr Geoffrey Tompkins, vice-chancellor, and Mr Hilary Barnard, president of the union, say grants are too low, students have accommodation problems, and there is a crisis in university catering.

The letter closely follows a plea by Sir Arthur Lindsay, chairman of the Committee of Vice-Chancellors and Principals, for an increased grant.

Economy drive at SRHE announced

The Society for Research into Higher Education is carrying out an internal reorganization in financial terms.

Its head office will be moving out of London and its staff reduced, and a drive to recruit new members is under way. There are hopes that the SRHE might benefit from the Society Working Party currently investigating the position of learned societies.

The publication of the SRHE's address is not to suffer. The SRHE's address is to be published in the *Journal of Higher Education*, published by the University of Oxford, April 15.

Job preparation schemes under fire

by Frances Hill

Pilot schemes proposed by the Department of Education and Science to provide vocational preparation for school leavers going straight into employment were under fire last week as inadequate. A DES conference in London on "Getting Ready for Work, 16-19" heard several complaints that the 10 schemes envisaged would not be enough to test the usefulness of "vocational preparation" on a large scale.

There was criticism, too, of the DES's treatment of school leavers going straight into jobs as a special category, separate from the rest of 16 to 19-year-olds.

The proposed 12-week residential courses are intended to develop the basic skills needed in adult life in general and work in particular. The schemes are to be jointly controlled and coordinated by the DES and the Training Services Agency. They may be started this autumn if agreement can be reached with the employers and further education institutions. Mr Mulvey, secretary of state for education and science, said at the conference.

Mr Norman Walker, of the Association of College Principals, argued that the schemes are on too small a scale to test the value and practicality of whole-school vocational preparation. It would be easy to staff a few pilot schemes, since "any college can get together a group of enthusiastic teachers" but much more difficult to staff vocational preparation for the 300,000 school leavers a year going straight into jobs. It might also be easy to arrange residential places for 300 students, but not for much larger numbers.

It might be better to seek the agreement of local education authorities for a large-scale experiment in three areas, instead of setting up 10 small schemes, Mr Walker said. The three areas should

include industrial urban, large areas, and "soft" Southern areas. Only on this scale could the role of schools in vocational preparation be tested.

Dr Eric Briault, education officer of the Inner London Education Authority, said that the reason for the small scale of the proposals was "both hands tied behind its back". Large resources were available through the Department of Employment and the Training Services Agency. The conference should have been arranged jointly with the TSA, which was already in the business of vocational preparation "in a large way".

The ILA intended to start a pilot scheme of vocational education for "young people well below average ability" whether or not the DES pilot schemes were started this autumn, Dr Briault said.

Compulsory day release urged

A system of compulsory day-release for young workers should be introduced by the Government, because day-release would never become widely available if left to voluntary action by employers and education authorities, Mr Len Murray, general secretary of the TUC, said.

The TUC was concerned about the hundreds of thousands of young people compelled to accept employment where no opportunities existed for training and further education, Mr Murray said.

A system of universal day-release could not be introduced overnight, but the Government should commit itself to such a system in principle. It should be initiating experimental courses to reverse the decline in existing day-release provision and to build up expertise in new courses.

The success of universal day-release would depend on measures on the adequacy of the provision for its introduction, including those leading to GCE examinations and the way ones, in which young people could find a stimulating and closely related to their experience at work.

As well as one-day-a-week release, and longer courses, residential courses of seven or eight weeks, equivalent to day-release, should be provided. These colleges of education will have given up initial teacher training.

Craft courses' plight raised

Since the introduction of the Coldstream reforms of the early 1960s there has been a steady erosion of the position of art and design education, Mr Clive Ashwin, a senior lecturer at Middlesex Polytechnic, told a conference of art college staff at Brighton on Wednesday.

It is now possible for a student to spend five or more years in post-school art education without being required to master or be examined in a craft skill, he continued.

The immediate postwar period had been the heyday of craft education, but an increasing stress on mechanization and the desire to "liberalize" art and design education by detaching manual training had combined to produce a growing proportion of school leavers who could lay claim to no definable craft skill. This problem had already become noticeable in the context of teacher training.

Mr Ashwin emphasized the need for colleges to make positive assessments and policy decisions about the position of crafts in art and design courses.

He predicted that the current round of course reviews for CNA would expose a measurable decline in craft skills, a decline which was having repercussions at many levels.

Mr Ashwin proposed and discussed three strategies for reviving and sustaining crafts in the art curriculum. The first of these, the concept and presentation of courses as complete, craft-centred, was being met with some enthusiasm. The second, the provision of crafts on a "demand-feeding" basis had been tried in the context of the DIPAD and had proved to be inadequate.

"Consequently I can see no alternative to promoting crafts as a 'complementary study' related to the student's central concern", he said.



"Bring crafts back to art courses", Mr Ashwin said.

1974 'worst year for jobs'

Last year was the worst in the past for graduate employment, Hull University's careers appointments board says.

In its annual report for 1974, the board said that 60 graduates out of those graduated in June—were totally unemployed in December, double the number in 1973. A further 4 per cent were in temporary jobs.

A distinct change in the pattern of employment had taken place in 1975, the report said. A number of major employers had completely suspended recruitment and openings in local government had been drastically reduced. Only in a few like accountancy had the demand held up.

The high salaries paid in the public sector had kept graduates away from industry, the report continued. "Industrial companies will not be able to attract sufficient numbers of really outstanding young men and women if they offer starting salaries several hundred pounds lower than the national average wage for married workers or the starting salaries in public service."

The report drew particular attention to the problems faced by mature graduates, who did not fit easily into graduate training schemes or salary structures. It called for employers to examine ways of assimilating mature students.

The report advised graduates to look to industry for their careers. As a nation, it would seem unlikely that we can continue to sustain our present level of public service and service industries. It seems likely that the demand for teachers will fall. There may even be a reduction in the intake into accountancy.

"This would lead us to the conclusion that more and more graduates will need to look towards the industrial sector if they are to work at all, and not all will be senior managers, specialists and so forth. The next few years look bleak though they could be uncomfortable for everyone in the graduate employment field."

More on advanced poly courses

Students on advanced courses at polytechnics and colleges increased by 13,600 between 1973 and 1974 according to provisional figures issued by the Department of Education and Science this week.

The increase in advanced course students is part of a larger increase of nearly 180,000 in the total number of students at polytechnics and colleges in 1974. A total of 5,638,400 students were registered on courses compared with 5,517,600 the previous year.

The figures also show an increase of 11,600 students on day-release

courses, reversing a decline which has been apparent for some years. The proportion of women students is also continuing to increase, particularly in part-time day and evening courses.

Total numbers of students at polytechnics rose from 156,700 in 1973 to 169,200. Numbers at further education colleges rose from 1,638,200 and evening institutes from 1,730,000 to 1,840,600.

Polytechnics have 76,800 students on advanced full-time and sandwich courses compared with 74,600 in 1973 and 49,900 on part-time advanced courses, compared with 44,900.

Detained lecturer flies back from Zambia

by Sue Reid

Dr Lionel Cliffe, the British lecturer detained for two months under Zambian state of emergency, has arrived back in Britain. He was released earlier this week with three fellow lecturers from the University of Zambia.

Arriving at London Airport, Dr Cliffe said there was grave concern for the 17 students and a Zambian lecturer still detained. The international campaign for their release would be stepped up and the defence fund continued, he said.

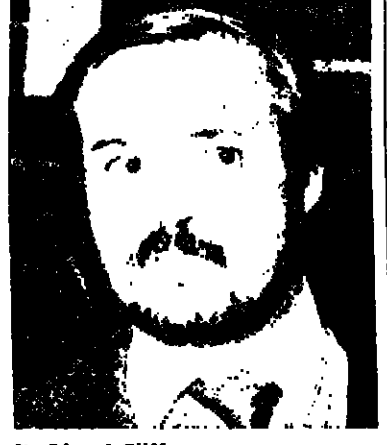
Dr Cliffe was reader in the university's department of political and administrative studies and in a former visiting fellow of Sussex University. He was detained by the Zambian authorities following internal unrest at the university, which has since been closed, and student demonstrations in favour of the MPLA in Angola.

Unrest at the university included fighting within the School of Humanities and Social Sciences over the introduction of specialized courses and a process of rationalization with which Dr Cliffe was involved. But there were also claims that some students were like "an orchestra with an invisible conductor on the payroll of a social imperialist power."

Although Dr Cliffe was never accused of any specific offence, he was served with a special notice as he left the central prison in Lusaka this week saying his continued presence in Zambia had been judged to be "inimical to the public interest". He was given 48 hours to leave.

During his detention Dr Cliffe underwent periods of interrogation of up to 40 hours and also spent three weeks in solitary confinement without seeing daylight. In the whole issue and management in Kabwe, north of Lusaka.

Two Dutch engineers and Mr Robert Moltono, a South African, were released with Dr Cliffe.



Dr Lionel Cliffe

The day before Dr Cliffe's arrest President Kaunda, declaring a state of emergency, claimed that there was foreign interference in the country. He added that some of the institutions of learning had been infiltrated and alleged that some students were like "an orchestra with an invisible conductor on the payroll of a social imperialist power."

At the airport he denied any involvement with the student demonstration with the MPLA but admitted that he was active politically in Zambia.

"I was politically active in one sense because I was teaching political science and it was well known but I did have a certain political position."

"Obviously there was some unrest in the country, but I think the university demonstrations that led to the whole issue and management in Kabwe, north of Lusaka."

Scots condemn plan to cut teacher training numbers

Government plans for an immediate reduction in teacher training places in Scotland have been condemned by the Educational Institute of Scotland and the smaller Association of Lecturers in Colleges of Education (Scotland).

A special meeting of the ALCES last weekend called for the suspension of negotiations with the Scottish Education Department on a new three-year degree to replace the existing three-year diploma for primary teachers.

The ALCES has asked for a new four-year degree, a more equitable position for student-teacher ratios could become more intense than for university medical schools.

Computer network urged

A national network of university computer centres was needed in Britain if academic needs were to be met, Dr Henry Chilver, chairman of the Computer Board, said this week.

Speaking to a conference of managers of university computing centres at Durham University, Dr Chilver said improved computing services could be provided at modest cost, providing economies of scale were achieved.

But he emphasized that "in developing computers in Britain in the next 10 years, it is vitally important that universities should retain management responsibility for computer resources."

"In no sense must we erode the

autonomy of universities to manage resources allocated to them, if effective management, control and responsibility are needed at the 'working level' of university and regional computer centres."

He said that the way forward in computing would require increasing collaboration between the bodies involved—between universities and between universities and the research councils. "Only on the basis of well-developed systems of shared resources can we hope to develop the extensive facilities needed."

"The management problems of increasing collaboration are considerable, and they will only be resolved if universities themselves grapple with the problems and learn how to deal with them."

Correction

In *The Times*, March 5, it was incorrectly stated that Southampton University English department has no linguistic or language study at undergraduate level. All single honours students of English follow a course in which several aspects of language are examined.

Sussex date

The battle on Sussex University, the fifth in Peter Wilby's series on the new universities, is not to be published next week as planned. It will appear on April 30.

Tory students to back Communists

by David Hencke

Conservative students are planning to back Communist Party and Marxist Labour Party members in elections for the top officers of the National Union of Students at next week's conference in Llandudnan.

The decision has been taken at the same time as the non-aligned moderate Students for Representative Politics has agreed to back Trotskyist candidates to break the Broad Left coalition stronghold on the top offices of the union. The Broad Left currently holds 14 of the 17 executive seats.

These decisions promise to make the elections for the top officers one of the closest-run events for several years. Although the Broad Left coalition of Communists, Labour Party and non-aligned Socialists will still dominate the conference with between 300 and 350 delegates, the growth of moderate students has been considerable.

Conservative students are estimated to have at least 80 and possibly 120 delegates. The Students for Representative Politics has 20 delegates, and the Liberals, who are split between libertarian socialists and parliamentary Liberals, have 50.

The combined International Socialist, International Marxist Group and Workers Revolutionary Party delegates is estimated at 360. There are about 200 delegates, mainly from small new unions, who do not belong to any group and are expected to be assiduously wooed by the moderates.

Seven candidates are standing for the presidency but the main battle will be between Mr Charles Clarke, standing for reelection for the Broad Left and Mr Hugh Lanning, who is standing as an Independent Socialist and is the author of the NUS direct action briefing guide to student occupations.

Mr Mark Haggard, of the Federation of Conservative Students is expected to be third, leaving moderate students to transfer their votes to either Mr Lanning or Mr Clarke. There will be a tough contest for the national secretary's post where Ms Sue Shipman, a Communist Broad Left candidate, is being challenged by Ms Val Coultas of IMG and Mr Peter Gillard of IS.

The treasurer's post could also lead to close voting. Mr Lewis is standing for reelection, but is being challenged by Mr Leo Brown of the SRP and Mr Chris Morgan of the Broad Left. Mr Brown has wide backing from moderate students, including Conservatives, Liberals and non-aligned groups.

The Broad Left are confident of holding the majority of executive seats, although IS, IMG and the Conservatives are expected to win one seat and the Liberals and the SRP could also win one seat.

Issues to be raised at the conference include electoral reform within the union with a call for a working party to investigate internal democracy, overseas students, social security education cuts and grants. The international report including NUS participation at the European meeting of students' unions in Bucharest will also be discussed.

A 20-year-old polytechnic director should meet the needs of mature and part-time students as well as the full-time school student. "Syllabuses fully appropriate for a 16-year-old may be very inappropriate for mature students and special syllabuses may be needed."

The union called for closer links between schools and colleges to help establish a common examination system.

New curriculum requirements for day-release students have been outlined by NATFEE in a policy statement reiterating its call for compulsory day-release.

Four main elements should be included in courses, covering general, vocational and remedial education, welfare and careers advice.

The union says that the emphasis in general education should be social rather than academic and there should be no formal assessment.

Don't evade questions, DES inquiry tells Sir Toby

by David Walker

Sir Toby Weaver, former deputy secretary at the Department of Education, was criticized by a House of Commons committee investigating the DES this week when he prevaricated answering questions about the extent of his consultations with interested bodies on the reduction of teacher training places in 1972.

Mr Arthur Lewis, Labour MP for Newham NW, told Sir Toby that the Official Secrets Act could not possibly prevent his answering.

Sir Toby said that over 30 interested groups were consulted but declined to say whether consultation took place before or after the Government had made its decision to reduce the places in the teaching profession, or if they were consulted on actual figures.

However, he added: "In 1972 there was a lot of consultation on teacher training; the process was so prolonged and intensive that it would have been quite difficult to have done more."

Another member of the Expenditure Committee's education and arts

subcommittee which is receiving evidence on the process of decision making within the DES, Mr Bryan Davies, Labour MP for Enfield North, criticized the department's preoccupation with figures.

He said the DES extrapolated trends and got figures right for their own sake, not for the sake of constructing a picture of higher education as a whole. The 1972 teacher training policy largely ignored the role of individual institutions, such as the colleges of education, within a general exercise of getting the numbers right.

Sir Toby agreed that the DES, from which he retired three years ago, should pay more attention to "long term and universal problems."

● Sir Toby Weaver has joined the Educational Studies Faculty at the Open University as visiting professor for two years.

He will head the discipline area of educational administration and management. The previous holder of the post was Mr Gerry Fowler, Minister of State overseeing Higher Education, a minister under whom Sir Toby worked in 1969-70.

Student totalitarians harmed political freedom—Swann

Student totalitarianism in British universities in the 1960s had damaged political freedom, Sir Michael Swann, chairman of the BBC and former principal of Edinburgh University, told the Headmasters' Association annual conference in Cambridge last week.

He said that eventually even the softest academic felt enough was enough, but by then the damage was done because disruption and intolerance of unpopular views had both become more legitimate than before.

"Had those minor versions of totalitarianism been sternly disapproved from the start, I think it they would ever have caught on and multiplied. But they were not," he added.

He referred closely to the warnings recently given by Alexander Solzhenitsyn and emphasized the need for a balance between industrial firms, trade unions, professional bodies and local authorities bearing down on the individual. If tensions became more acute, a sudden burst to "as always" and more authoritarian style of Government was possible.

But education had a major role in preventing this. A knowledge of history and a sense of how society had progressed was vital, together with an appreciation of English and a critical attitude towards language and its abuses.

At the same time the quality of life enjoyed by contemporary society depended to a large extent on the scientists, and the education system continuing to turn out young men and women trained in the full rigour of the sciences.

● The key to British industrial regeneration lay in persuading more young people to take jobs in manufacturing industry, Mr Mulvey, Secretary of State for Education, told the Headmasters' Association at Cambridge.

Mr Mulvey said: "I am concerned that young people appear to attach little value to careers. I think it is wealth-generating industries and in commerce upon which the country's economic future depends."

"The problem goes far beyond my ministerial sphere of responsibility, but I believe that it provides the key to our industrial regeneration."

"A start could be made by an attempt to change the attitudes of our ablest students so that they not only contemplate specialisation in science and mathematics, but also prepare themselves for the challenge of a career in industry after university or polytechnic."

Mr Mulvey told the headmasters that the Government wanted them to spend 10 per cent more students at the universities qualified in science and mathematics.

Support given to common exam

Further education students should be able to take the same 16-plus examinations as school students, the National Association of Teachers in Further and Higher Education recommended this week.

The union supported the replacement of GCE O level and CSE examinations by a common examination as proposed by the Schools Council. It said that further education will be a major provider of the new examination, since between 20 and 30 per cent of all O level candidates currently come from that area.

It said any new examination should meet the needs of mature and part-time students as well as the full-time school student. "Syllabuses fully appropriate for a 16-year-old may be very inappropriate for mature students and special syllabuses may be needed."

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Four main elements should be included in courses, covering general, vocational and remedial education, welfare and careers advice.

The union says that the emphasis in general education should be social rather than academic and there should be no formal assessment.

New DoE move on accommodation

The Department of the Environment is to take positive steps to encourage local authorities in providing accommodation for students and single people.

Mr Freeson, Minister for Housing and Construction, told Parliament this week that in the areas where student demand impinged on the general housing market, schemes which were mainly occupied by students would be eligible for subsidy or grant, provided they contributed to meeting the general housing needs of the area.

"Schemes should normally provide for at least a proportion of non-student but those for students only will be considered on their specific housing merits."

Nearly 200,000 students lived outside their homes and this figure was expected to increase in the next five years. In many towns the number of single people was bringing pressure on good family accommodation for rent which was already in short supply.

NEXT WEEK

Business education
Politics books
Sandwich courses
Rom Harré's social psychology
Independent University

'Universities' role unrelated to manpower planning

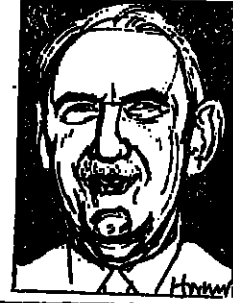
Lord Bullock, Master of St Catherine's College, Oxford, has spoken out strongly against manpower planning in higher education. At a conference in Oxford last week on admissions to higher education he said that his confidence in the future of higher education in Britain sprang from a belief that it was doing a job unrelated to manpower planning but directly related to helping young people develop themselves individually and intellectually.

He told the conference, organized by the National Institute for Careers and Education Counselling: "I believe that young people should be given intellectual confidence more than anything else. The systematic orderly study of any major subject at any university, if backed by interest, gives a young person confidence in their own ability to cope with difficult situations and use basic intellectual procedures."

For me the future of higher education is bound up with satisfying each generation of young people in this respect. "Higher education," said Lord Bullock, should always be able to provide for the young person who did not have a sense of commitment towards any one particular career. It was important to break down the attitude among young people that was wrong not to decide on a career before entering higher education.

"I am very much concerned with the people whose motivation is there but weakened, confused, or even destroyed by the fear that they do not know what to do and therefore do not feel they should enter higher education. They should be encouraged and told that

'The specialised training now being given to young people in universities will become obsolete in years to come'



higher education is not just for those who are seeking a professional training. They should be told to go and study what interests them and not to believe that this will disable them from taking a useful and profitable place in society later."

Lord Bullock added that the specialized training now being given to young people in universities would be obsolete in years to come. Therefore the students who entered university, and saw it as a place not just for acquiring professional competence would not be worse off in the end.

He went on to criticize the "extraordinarily varied and inconsistent" provision of higher education over the last 20 years. The variables were so difficult and so numerous that it was almost impossible to get a clear picture of how higher education would move in the

future and any projections were likely to be as unreliable as in the past.

Questioning the Government's decision to put colleges of advanced technology into the university sector only a few years before creating polytechnics, Lord Bullock said it was a move he never ceased to marvel about. The colleges of advanced technology could have been an important element of the polytechnic sector.

On the colleges of education he said their confidence had been shaken by the Government's decision to turn them into colleges of general education, in many cases by amalgamation. The decision had been dominated by a belief in numbers but teachers did not need a less effective preparation for their job. They should be given a more thorough training in education.

He added that the BEB had imported into the colleges an academic influence which caused the degeneration of other forms of training.

Commenting on the Government's belief in the late 1950s and early 1960s that higher education was the key to economic growth Lord Bullock said it had been a grave misunderstanding. Although without higher education a modern industrial society would be unlikely to maintain itself it was wrong to think that an increase in higher education led directly to an increase in the gross national product.

In the future higher education should develop the widest possible variety of experience to offer young people. The wider the spectrum between universities, polytechnics and colleges of education the better.

Is overseas aid the answer to dole queues?

Several thousand young teachers are likely to be unemployed in September 1976. What a disaster! It will be a waste of training, a waste of enthusiasm, a waste of young people at the beginning of a career. Who can encourage school leavers to train for the teaching profession in the next few years?

Yet we are also making severe cuts in our traditional provision for overseas students. It does not appear to have been well thought out with regard to the long term effects on the British economy; and they are a betrayal of part of our national heritage.

My own experience in the World Bank—shared by many thousands of others—is that we are still "the boy" by governments and people overseas. They share our language and much of our culture and they help us to others. In return we give them a conceivable difficulty in life when they want to study in Britain.

Few Third World countries have achieved universal primary education but in the next 15 years many of them will achieve a national programme of secondary education. They need our expertise and our money. At present this aid is provided in diverse ways. The Ministry of Overseas Development, the British Council, the Crown Agents, the Commonwealth Secretariat, the Overseas Development Administration, the Exchange and Development Services, the new paid Educational Services scheme, and others each with their inputs.

Yet there seems to be no real dynamic coordination of effort. There is no "go out and sell" policy like that which has recently won multi-million dollar contracts to us in the White House. The development of our sports and recreation facilities is a good example.

So we shall have thousands of unemployed young teachers, well as redundant and redeployed lecturers, while many countries are crying out for British expertise. Where is the creative and imaginative thinking at national level which can marry these developments?

It should be remembered that many expanding countries of the Third World want to pay a fair price for technical aid. Charitable schemes often offend them. They want to stand aside a little from the prevailing gloom and point to the progress that we have made recently, if only on the grounds that the UGC probably need cheering up as much as we do.

6.30 The MENC is a part-time day-release course for engineers on presentation to the UGC who are visiting next week. Decide that we should stand aside a little from the prevailing gloom and point to the progress that we have made recently, if only on the grounds that the UGC probably need cheering up as much as we do.

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Don's diary

Monday

8.30. Walk across to my office. It's a clear, crisp morning and a light cover of snow on the Campuses glints encouragingly through the gap between the grey stone houses opposite. Try and batter my untidy desk into some sort of order. Make a list of things to do this week. Shuffling through the papers, I find a note headed "This Week" dated a week ago. It's the same list.

9.10. Walk to a meeting with the principal. I follow a bearded bottom with a bright yellow smiley face exhorting me to "Have a Nice Day". This encourages me strangely but so distracts me that I am inside the principal's office before I realize it. Hope my expression hasn't been more than usually vacant. Shuffle brain into calm, thoughtful, sardonic mode.

We are here to discuss the Scottish Business School. Nobody seems to understand it completely, least of all those most closely involved in it. This is especially worrying for me. I came to Scotland to work in it. The SBS comprises the main teaching departments of Edinburgh, Glasgow and Strathclyde Universities. There are naturally tensions between the three divisions, but such has now achieved a positive relationship that we now have the confidence to cooperate.

To the rationalising centralist mind, the SBS is an ineffective second best; to the advocate of university autonomy, it is an anomaly. But in the opportunities it offers for inter-university cooperation and for generating new ventures which might otherwise not have got off the ground, it provides a model for similar developments that may come to seem viable in other university contexts in the next few years.

11.45. Class with postgraduate diploma students. Last week I gave out a cue. This week we do an exercise based on it. It goes quite well, but there are not enough in the group with industrial experience to pick up the significance of the industrial device on which the analysis is based.

2.00. Meet with professors of management and business policy to plan our presentation to the UGC who are visiting next week. Decide that we should stand aside a little from the prevailing gloom and point to the progress that we have made recently, if only on the grounds that the UGC probably need cheering up as much as we do.

6.30. The MENC is a part-time day-release course for engineers on presentation to the UGC who are visiting next week. Decide that we should stand aside a little from the prevailing gloom and point to the progress that we have made recently, if only on the grounds that the UGC probably need cheering up as much as we do.

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Thursday

11.00. Visit a local firm for lunch and chat about our new MBA programme. This is undoubtedly the best thing since sliced bread and is unique in the United Kingdom. It offers an opportunity to the managers who have no formal qualification in management.

It is organized on a part-time basis over three years. Participants keep on their regular jobs, and this provides them and us with the continuous basis in reality which alone permits effective learning.

The net balance of opportunity and inconvenience is spread as widely as possible. The firm releases the man for nine full Mondays a year, the participant himself has to give up nine corresponding Saturdays morning and 18 Monday evenings, and the teaching staff undertake some teaching in what, by the standards of other departments, would be regarded as unusual hours. However they gain the remainder of the week for research, writing, and other activities. Unhappily I find myself on an over-selling like mad.

The West of Scotland Report some time or other, was so complicated on what it described as "the low quality of management in the west of Scotland". But there is no sign of that here. I am quizzed keenly, not so just ruthlessly, by the end of lunch.

2.00. In the engineering building lecturing to fourth-year engineering undergraduates. They are positive and lively if somewhat given to over-enthusiastic appreciation of my occasional *bona mots*. This is the more surprising as clearly two-thirds of the group do not immediately comprehend the great Anglo-Saxon cultural tradition. However, they bang the desks with the best of them.

Education is good. Educating overseas students is excellent. But the basic hard core of a course like this should be indigenous local talent and there is plenty of it about, as our Miling intake shows. Further down the road we are conveying the sea of oriental faces makes one realize how cross it would be to drive up the fees for overseas students to the level which would make them a massive and unproductive drain on the British exchequer.

One realizes, too, the extent of the enormous prejudice in society and the educational system against the activities which gave this country its industrial strength. And it is a good course, it is an important course, it is a fun course even. What went wrong? Where did it go wrong? In the schools? In the "arts" tradition? Or in industry itself?

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To sceptics I recommend a visit to the university bookshop, where a large, separate section reserved for Marxists will undoubtedly be found, along with ample stocks of Milliband's highly popular *State in Capitalist Society*. The truth is that in the teaching of politics Marxist political sociology has become a competing, and occasionally dominant, orthodoxy.

How did this intellectual change come about? There were the non-academic, unacademic, reasons that invariably accompany intellectual fashion. In the simpler disciplines, Marxism is dogmatically convenient, indeed comforting. Like Freudian psycho-analysis, Roman Catholicism, astronomy and other all-embracing systems of belief, Marxism provides a killing of any-to-essence explanation for tools. Not too much of them, and once their use has been mastered so adaptable. There is almost nothing they cannot do. I need not define, to compare, to qualify, to reduce to absurdity. But one can, away those old-fashioned, academic, things to do next week.

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Boo, hurrah, a surfeit of Marx



DAVID WEIR

Shortly before my PPE finals at Oxford, my tutors asked me what I thought of the course. Since it was meant to offer a broad introduction to philosophy, politics, economics and, optionally, sociology I dutifully suggested that the complete absence of any reference to Marx seemed a little odd. "He has nothing to say to philosophy," the philosophy don stoutly declared. "Of some historical interest, perhaps," my economics tutor ventured.

Off I went to Houghton Street to read political sociology under a Dr Milliband. "I dare say you won't be given much of this to read at Oxford," he grinned, handing me the syllabus. I wasn't, and the nine months that followed were the most intellectually stimulating I ever enjoyed. A year later, lucky beneficiary of the post-Robbins boom, I was an assistant lecturer in this exotic, new-fangled subject called political sociology.

That was 10 years ago. Judging from Ralph Milliband's judicious lecture "Teaching Politics in An Age of Crisis" (reprinted in part in *THE TIMES*, March 19), politics curricula have barely changed in content, object or spirit. In the absence of achievement, the massive interpretation of this bizarre belief in that Milliband is being charmingly modest about the impact of his own books and teaching.

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traditional political science that Milliband well, if rather belatedly, did the very thing that the new universities were fertile soil for fresh approaches: the resurgent student radicalism responded to the debunking, reality-behind-the-facade tradition of political sociology and encouraged a renewal of interest in Marx (not, by the way, the other way round).

Political studies are immeasurably richer as a result. Marxist political sociology focuses upon relations of domination, conflict and change rather than harmony, order and stability; it traces rather than obliterated the connections between politics and other aspects of social life; its understanding of social change is sophisticated; its radical scepticism has made it the best-stocked arsenal for attacking conventional political science.

But it remains an orthodoxy—the counter-orthodoxy—for all that. Like a well-organized European communist party it has acquired the parallel structures and pathologies of its declared enemy. Every charge levelled at traditional political science could as plausibly be turned against Marxist political sociology (although not against Milliband, or, for that matter, the best traditionalists either).

Let us start with the minor criticisms. Sneering asides at an American political science industry? Snoring ripostes about the American Marx industry? Publishers and authors alike have discovered there is a profit in Marx (sorry, irresistible temptation). There is even, in the finest tradition of the American Political Science Association, an Isaac Deutscher Memorial prize for the best contribution to Marxist theory. But it is a place for competition and incentive.

Extreme triviality? Textual exegesis of Marx's voluminous writings flourishes and given that, whatever his virtues, clear and consistent writing does not come easily to him, it will continue unabated. Extreme abstractness? Decently setting aside the early Marx, one has only to read, for example, Althusser or Poulantzas, both in fashion among radical political sociologists, to forgive Talcott Parsons even his off-days.

Neglect of the social and economic context? It is only in the past few years that Marxist political sociology has caught up with common sense and avoided the obverse by recognizing the massive independent power of the state and the "autonomy of the political realm" in society.

Let us proceed to the major criticisms. Neglect of crucial problems? Consider the almost total power to Scotland. One important question is whether and how a powerful and centralized state in an industrialized society can peacefully and successfully devolve powers, in the absence of achievement, the massive interpretation of this bizarre belief in that Milliband is being charmingly modest about the impact of his own books and teaching.

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Difficulties during change from school highlighted

The problems facing students during the transition period between school and higher education were highlighted by Mr Michael Da Costa, student counsellor at the University of East Anglia.

He said a whole range of difficulties, including the attitudes of academic staff and their teaching abilities, afflicted students when they were uprooted from the protected educational security of home and school and found themselves on their own in a college or university.

Mr Da Costa said young people had positive expectations about university or college life and they expected to have a good social life. For instance, an anticipated polytechnic or university as a powerful centre of learning.

While fantasy expectations of higher education were often shattered, many fears and apprehensions were realized by students. They centred around disappointment with the environment, personal identity, loneliness or course selection.

He added that many students had genuine learning problems. A student could go through years of education and arrive at university without knowing actually how to study. They were often nursed through a good school or sixth form and were used to a close relationship with their teacher. But they lost their elated position at university.

Mr Da Costa said very few members of university academic staff were trained in teaching or knew exactly what skills they were expected to teach. Some were even lacking in interpersonal skills and had come into the university sector with the main aim of doing research. Students were people who impeded their research and there was a lack of sensitivity towards students' learning difficulties.

Later, Miss Vivien Lipschitz and Miss Vicki Payne, joint authors of *The Alternative Perspective*, stressed the need for students to take a year off between school and higher education. They said students should be positively encouraged to make a break between school and college or university.

Urge for break suggested as a reason for drop in demand

The growing number of students deciding to take a

ACADEMIC DEVELOPMENTS

London unites Europe for area studies MA

by Sue Reid

London University's Centre of International and Area Studies is to introduce a selection of new programmes, concentrated on Europe, within its MA area studies degree course from this October.

The degree already covers areas throughout the world and students can take courses related to Africa, the Commonwealth, Eastern Europe, Russia, Latin America, the Far East and the United States. But until now programmes on Europe have not been offered.

Mr Anthony Amore, secretary of the centre, said that it has been decided from an early stage of planning to treat Europe as a complete geographical entity. But, he added, it would be divided academically into five programmes of manageable proportions for study purposes, and these had been devised to cover historical periods and themes of social, political, economic or cultural significance.

Staff have been involved in planning the European branch of the MA area studies degree for some time and are predicting that it will be very popular with graduates. The programmes will be taught at a variety of the university's colleges and some will be organized on an inter-collegiate basis.

The first programme, "The Impact of Religious Change of Society in Early Modern Europe", is to be staged at Royal Holloway College

and will embrace seven courses covering such topics as the literature of evangelism in France 1500-1700 and the intellectual life in counter-reformation Italy.

Three other programmes, entitled "The Enlightenment", "Nationalism and the European Working Classes" and "Working-Class Movements", will be offered on an inter-collegiate basis. A fifth programme, "European Community Studies", will be taught at Queen Mary College: it has been in operation for three years but will now come under the direct auspices of the area studies (Europe) degree.

Academic staff from 11 of the university's colleges and institutes will be involved in the courses but they will be the direct responsibility of the university's European higher degrees sub-committee or the special advisory committee on area studies. Professor J. H. Burns of University College, is chairman of the sub-committee.

Queen Mary College already administers the European Community Studies programme and the religious change will be considered by Royal Holloway College when it is launched this autumn. The three inter-collegiate programmes will be run by the area studies centre.

Candidates for the new degree programmes will be expected to have an honours or joint honours first degree with a first or second class pass and will be able to take the degree full time over one year or part time over two years.

Social work training in Ulster boosted

by David Walker

The professional training of social and youth workers in Northern Ireland will be stimulated if a course at the New University of Ulster in Coleraine gets final approval.

The course, for a Certificate of Qualification in Social Work, will be mounted in the university's Institute of Continuing Education. The social work element has already been approved by the Central Council for Education and Training in Social Work. The organizer, Professor Derek Carter, is expecting the Department of Education shortly to recognize the course for the professional training of youth workers.

It will take two years full-time or four years part-time for mature students who are likely to have experience of practical social work.

One emphasis will be on "group work" and it is planned that field social workers, community workers, residential social workers and youth workers would be trained together within this framework.

The course organizers said recently: "While it is expected that a large proportion of applications will come from people already employed in social and youth work, this course offers an opportunity for able people in jobs outside the social services to change careers."

In particular it is hoped to increase the numbers of trained staff in residential institutions and to provide youth workers able to work in situations outside the normal club setting.

One-subject teaching degrees include escape clauses

by David Hencke

The debate on whether the Bachelor of Education degree is the most suitable qualification for specialist teachers has been re-opened by the approval of two Council for National Academic Awards teaching degrees for Sunderland Polytechnic.

The new four year honours degrees, a BSc in education and physical science and a BA in education and mathematics break new ground in being single subject specialist degrees which allow students to opt out of the teaching qualification if they find it unsuitable.

The courses are in fields which will enable successful students to seek jobs in secondary schools, sixth form colleges and further education.

They are also unusual because students will have experience of industry in the form of an industrial attachment, during the third term of their third year, giving intending teachers some experience of industry and allowing those who have decided not to pursue a teaching career to claim work experience when they apply for jobs.

They include a high level of professional commitment with an on curriculum planning, organization in schools, such areas as remedial education and guidance and counselling.

The physical science students opt for a wide range of subjects including physics or chemistry, astronomy and organic chemistry. There is also a compulsory course on "physical science in education" which attempts to ensure that the specialist teachers in the wider field of education have a sound knowledge of algebra, statistics, computer logic and linearity and a mathematics workshop where students are encouraged to apply model building to their own work.

Mr Harry Webster, deputy director of the degree courses, said that the degree of involvement in the study of the subjects and the courses which are flexible for students to be offered part-time in teaching and business and administration. The polytechnic is planning to offer new Bachelor of Education degrees for primary teaching, has also an unusual proposal for the CNEA for a BEd degree in studies and education.

Part-time MBA at Glasgow

Business executives in the west of Scotland anxious to develop their careers are to be given the chance of taking a new three year part-time course at the University of Glasgow from October.

The university's division of the Scottish Business School are planning a postgraduate qualification to give working managers in industry and the public service a chance to study the concepts underpinning their work and acquire statistical and other skills to improve their decision making.

The course, a master's degree in business administration, will be open only to those with a degree or equivalent professional qualification who have considerable experience of management. Its novelty lies in being part time and in relating to the needs of the students' firms. The

outline syllabus for the course includes marketing, the application of social theory to business, quantitative methods and development of management.

Professor David Weir, the coordinator, said recently that MBA would appeal particularly to managers wishing to improve managerial abilities of bright executives but unable to leave their jobs for a one-year full-time course.

He added: "The programme is designed to relate learning and career development to the existing problems posed for managers by social and technological change with a special reference to the west central Scotland." The course could appeal to those since it is three years and will reduce the disruption such as normally caused domestic life.

Communication for scientists

Chelsea College, London, has started teaching two half "course units" in communication studies in science, under the guidance of Mr Neil Ryder, senior lecturer in education at the college's Centre for Science Education.

The course is intended to provide undergraduates for science with necessary for the communication of scientific ideas to a non-specialist audience and are among the first of their kind to be offered in a British university.

The first, "Introduction to Communication Studies", is a project in which the student selects an area of science he has studied and writes a paper on it, also making a television presentation.

The second course, "Advanced Communication Studies", concentrates on theories of communication in relation to case studies with a science content.

There are 22 students on the course at present, three from Imperial College, London.

Energy engineering

Queen Mary College, London, is to offer a course in energy engineering from October 1976. The course is being designed to cover the development of new energy sources and the conservation of existing resources.

How to keep industry healthy

Drainage, sewage and the washing hands are not among the topics included in South Bank Polytechnic new B.Sc. degree course in occupational hygiene, prospective students are informed.

Occupational hygiene, they are told, is "the anticipation and recognition of all agents of industrial origin causing nuisance, discomfort, injury to people at work and in the community, the evaluation of agents, and their control."

The course aims to train professional hygienists to work in industry and public service, providing a career opportunity to school leavers whose A-levels include chemistry or physics.

It is not generally known that occupational hygiene has been established as a separate academic discipline for many years, but it has been limited to postgraduate courses.

The new Health and Safety Work legislation has focused attention on the shortage of factory inspectors, and graduates in occupational hygiene will be encouraged to apply to the inspectors.

The first year of the course concentrates on human physiology, the second on the working environment and the third on the interaction between the two.

A new two-year part-time course in occupational hygiene is planned to start in 1976. It will be open to students who have completed a first degree (or equivalent) and are currently employed in industry.

Alan Cane on a new form of on-the-shop-floor training for higher engineering degrees

Teaching companies generate profit all round

The "teaching company" concept, introduced jointly by the Science Research Council and the Department of Industry only three months ago, has already excited interest among industrialists and academics.

At Aston University, Manchester University Institute of Science and Technology and Salford University have already initiated or are initiating "teaching company" schemes, while Manchester Polytechnic and Lancaster Polytechnic are seriously considering the idea.

Three industrial companies are now involved although only one, CompAir Industrial of High Wycombe, is willing to make its involvement public.

A "teaching company" is analogous to a teaching hospital: a company where, in the words of Dr D. T. N. Williamson of Keros Research Ltd, who is generally credited with originating the idea, "experienced practitioners, researchers and students intermingled and cross-fertilise ideas while doing a job in a real environment connected with society where they can bring about changes which fit a real situation."

The scheme is underpinned by two acute worries: the fact that British manufacturing industry is losing its competitive edge in world markets and before and the realization that this state of affairs is unlikely to improve until manufacturing industry is able to attract a fair share of the best graduates.

Not rigid

The aim, therefore, is to develop a new and attractive kind of postgraduate engineering course while at the same time building a closer liaison between industry and higher education and promoting the improvement of manufacturing industry.

The "teaching company" concept is not rigid and each university or polytechnic is free to interpret the scheme in its own way. UMIST, for example, is looking for graduates for a two-year MSc course 18 months of which will be spent working on a project in an as yet unnamed company. Aston University, on the other hand, has already got its scheme under way in co-operation with CompAir Industrial, and is offering a three-year course leading to a PhD.

CompAir Industrial Ltd, Britain's first teaching company, is well suited to its role. It is the largest manufacturer of air compressors and associated equipment in the country, making over 100,000 300 horsepower plant compressors to tiny gadgets for cleaning spark plugs. Its parent company, CompAir Ltd, ranked 291st in the Times top 1,000 last year.

Both could have done PhDs after their first degree but had preferred to go into industry. Finance was clearly a big consideration, Mr Love said: "I was certainly frightened by the financial aspects; fortunately I don't have a family, but if I had, to have done a PhD on the present grant would have been impossible."

Mr Peter Bonnor, managing director of CompAir Industrial, emphasized that he was greatly in favour of educational establishments of this kind, adding: "It will enable us to tackle our problems faster and to penetrate world markets faster. We will have more brain power behind our planning—but if it does not work we will find another way."

Everybody in the scheme hopes it will be successful and that the solution to the industry's other problems which CompAir is working on will be applicable to all other batch manufacturers in Britain, so advancing the whole of British industry.

Aston and CompAir plan to appoint a third research associate on the scheme in May, and other manufacturing company schemes should now be under way. Imperial College, London, plans to collaborate with CompAir on the definition of management information systems.

In its discussion document, *The Teaching Company* (free from the SRC, Stone House, High Holborn),

It is also a batch manufacturing company and has all the problems peculiar to these organizations. The greatest drawback to a batch manufacturing enterprise is its complexity.

The number of individual parts and assemblies needed to manufacture CompAir's huge range of products runs into thousands. To ensure that the right amount of raw materials are ordered, the right number of parts manufactured and the right parts in the right quantity available in the right place at the right time is a logistic exercise of awesome complexity.

CompAir uses a computer to help solve the problem and is reckoned to be quite efficient. Nevertheless, the system could be improved; the job of improving it is a first rate exercise in engineering management and so an excellent test-bed for the SRC/DOT scheme.

One cornerstone of the teaching company concept was the idea that the students had to tackle real problems rather than artificially devised projects. CompAir had a problem which had to be solved. It was neither dramatic nor spectacular but a typical production engineering problem which had to be mastered if CompAir was to maintain its position in world markets. It involved the organization of the spares and services department.

Provision of spares is not a fringe activity to CompAir. The firm sells compressors all over the world which have to be maintained and serviced and any delay means a frustrated and possibly lost customer. Furthermore, the firm is changing its product line to a new kind of compressor, designed with environmental considerations in mind—the "packaged" rotary compressor. Nevertheless, customers will still be using the older style machines for the next 15 years or so and will demand spares and service to keep them running.

The problem of how to organize the spares department was already in the firm's rolling corporate plan when it was approached by the SRC and in the normal course of things would have been handled by its own management team to look for solutions.

Instead they have appointed Douglas Peckett, 32, and David Love, 27, to tackle the problem under the auspices of the SRC scheme. Both men had engineering degrees and had been in industry since graduating. Mr Peckett, in fact, was a CompAir employee.

Both could have done PhDs after their first degree but had preferred to go into industry. Finance was clearly a big consideration, Mr Love said: "I was certainly frightened by the financial aspects; fortunately I don't have a family, but if I had, to have done a PhD on the present grant would have been impossible."

Mr Stewart said: "It cannot be bad for us to have the image of a teaching organization—after all it does not seem to have done St Bartholomew's hospital in London any harm."

Mr Peter Bonnor, managing director of CompAir Industrial, emphasized that he was greatly in favour of educational establishments of this kind, adding: "It will enable us to tackle our problems faster and to penetrate world markets faster. We will have more brain power behind our planning—but if it does not work we will find another way."

Everybody in the scheme hopes it will be successful and that the solution to the industry's other problems which CompAir is working on will be applicable to all other batch manufacturers in Britain, so advancing the whole of British industry.

Aston and CompAir plan to appoint a third research associate on the scheme in May, and other manufacturing company schemes should now be under way. Imperial College, London, plans to collaborate with CompAir on the definition of management information systems.

In its discussion document, *The Teaching Company* (free from the SRC, Stone House, High Holborn),



Factory floor at CompAir Industries, first of Britain's teaching companies

In fact, both are employed as research associates by the SRC and so paid salaries in the region of £2,500-£4,000. UMIST is offering research associateships worth between £2,766 and £3,990 on its MSc variant. They work in a small office adjacent to that occupied by their industrial tutor, Mr H. C. Stewart, CompAir's Industrial Engineering Manager, a very Scotsman who knows the batch engineering business backwards.

Every few weeks or so they visit Aston University to take particular courses agreed in consultation with their academic tutor, Professor R. H. Thornley of the department of production engineering and John Sawyer, senior lecturer in the department.

Investment

Mr Sawyer says the students are expected to spend about 300 hours in course work at Aston but they are free to make whatever use they choose of the wealth of academic expertise there.

The advantages to the firm are clear—they have the use of a number of highly qualified young engineers to solve vital problems at, largely, the SRC's expense—although it must be pointed out that the investment in the scheme makes of its time in running the scheme and working with the students cannot be overestimated.

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Growing challenge of the Greekless freshman

TELEVISION

Strong words for 'near disaster'

Colin Coles

Polys pursue their own chosen path

Bill Chavner

Polytechnics are making increasing use of television for teaching. And they have not emulated the university example to any significant extent, although useful lessons have been learnt from the universities.

Since the mid-1960s greatly improved television systems of a simpler, more flexible, cheaper and wider range have become available and reliable colour systems which, overall, cost little more than equivalent monochrome installations are now on the educational market.

The availability of convenient and reliable portable facilities in open reel, cartridge and cassette formats which do not require the installation of complicated inflexible cable distribution systems has made the effective use of television in small group tutorials which now gives rise to much of polytechnic teaching.

Significantly, television is seldom deployed in the polytechnics as a separate medium through a "television service facility". The policy at Leeds Polytechnic since 1971 has been to integrate the provision of educational television into the comprehensive central educational technology unit set up as a major factor in the development of establishments teaching facilities.

Our approach has been on a consultancy basis with an educational technologist working together with teaching staff and media specialists. Other polytechnics are now adopting the integrated approach, either in the form of a central educational technology unit, or in the form of a service, or in the form of a department. Interesting developments along those lines are taking place in at least six other polytechnics.

At the moment television recording facilities at Leeds are available at three distinct levels: the simplest user portable kit of the "Mankette" type which are used by students and staff as video notebooks for field work in connection with projects in architecture, landscape and other areas; the more sophisticated "Mankette" type which are used by students and staff as video notebooks for field work in connection with projects in architecture, landscape and other areas; and the most sophisticated "Mankette" type which are used by students and staff as video notebooks for field work in connection with projects in architecture, landscape and other areas.

Two cameras instead of 200 students

David Butts

Television in colleges of education is used to support direct teaching, in lecture rooms and laboratories, but in library resource centres, where students can work independently with a variety of materials, including video tapes and cassettes.

The use of television in teacher education can be grouped under three headings: observation, self-assessment and television as an object of study.

Television observation of classroom teaching has been in the mid-1960s as a way of coping with the rapid expansion in student numbers. There were obvious advantages in taking two or three cameras into a classroom, rather than two or three hundred students. But this kind of electronic observation, particularly when coupled with video recording, has a number of disadvantages. It is costly, it is time-consuming, it is often too late to see the error, and it is often too late to see the error, and it is often too late to see the error.

The experience of observation could be improved by the use of a large group and, by means of recording, particular incidents of a lesson could be replayed for analysis and discussion. Television observation has proved a useful complement to live observation, though it has never been thought of as a replacement.

There have been plenty of technical problems, such as capturing the right atmosphere of children in the classroom, but the main problem has been the lack of a suitable medium for recording and replaying. The use of television for recording and replaying has been a major factor in the development of establishments teaching facilities.

today, we can look on both CCTV and educational technology as good ideas that never quite made it. We have to ask the question, why?

We have to look at two aspects of the situation. The first is the context into which the innovation (such as CCTV) is to be introduced. We need to know much more about what happens between students and staff. I believe this probably has to do with the present situation, for we are in a state of developing solutions to the wrong problems. We have yet to discover what the real view of the complex dynamic that makes up teaching and learning. Secondly, we should analyse characteristics of the innovation that make it potentially useful or suitable. In other words we must ask the question: what can the particular medium—what can the medium do? For example, CCTV can transmit pictures and sounds simultaneously; it can show events happening at that very moment; it can be recorded on video tape; once recorded it can be played back immediately; it can be viewed in normal room lighting and it can be operated by the non-technical.

Given these attributes, is the answer to develop studios? Almost certainly not. Relatively recently a high level of portability has been introduced into CCTV, and this is being used universally, but before that it was possible to set up a single camera to look at an event. As long as 10 years ago I was using CCTV to illustrate an electrocardiograph being operated in one room and a lecture theatre full of students in another. And so did many others. The cost of the enterprise: a few hundred pounds.

In Southampton we feel that we were lucky. We missed a bandwagon, our development came too late to get on it. Instead we have developed an integrated unit (now with 33 members of staff) producing slides, graphic displays, tape recordings, and providing production and maintenance services for audio visual equipment, we run courses for lecturers on teaching methods, we carry out evaluative research, and we do some television, but only if the problem can be solved by that particular solution.

Colin Coles is assistant director, department of teaching media, Southampton University.

LETTERS TO THE EDITOR

Marx integrated

from Mr A. Kison

Sir,—Ralph Miliband's essay on teaching politics (*THE TIMES* March 19) has a rather misleading sub-title. Where are the "new perspectives" and what "recent changes in society" demand them?

He trots out the tired old clichés about relating politics to "socio-economic" forces, about simplification (as opposed to Miliband's) readings of Marx, about Marxism being more than "economic determinism" and about the true political bias of the non-party political party, and about the development of intellectual rigour, that it has to do with the clichés of two decades ago?

His argument consists of a lament about the neglect of Marxism and a call for integrated, problem oriented teaching. In relation to the first point, Marxism was certainly neglected in Miliband's student days, but we cannot base present prescriptions on outdated evidence.

There has been, as everyone must be aware, a virtual explosion of academic interest in Marx in recent years. It is impossible to discipline without being introduced to the Marxist intellectual tradition.

As for the second point, whilst rejecting the implication that the only worthwhile integrating perspective is a Marxist one, Miliband's argument is a rather naive and unconvincing attempt to persuade us that the Marxist intellectual tradition is the only worthwhile integrating perspective.

However, his solution (apart from adopting a Marxist viewpoint) seems to be to urge students to "doubt all things". Now this is an eminently sensible thing to say to any student, but it is hardly a "new perspective".

One is reminded, on reading Miliband's, of the famous German Constitution "essay". The problem coupled with a paucity of constructive suggestions for solution.

Yours faithfully,
A. KISON
Senior lecturer in government,
Department of business studies,
from Mr Geoffrey Williams

Sir,—Professor Miliband's polemic on the teaching of politics (*THE TIMES* March 19) fails to raise a single question of original or fundamental importance, or for those anxious to develop an approach to the study of politics which takes into account both structural and behavioural realities.

He is content to go on saying (the one old thing in the hope that it is supposed to mean) "There is here as he had always said."

After some 20 years of teaching politics, he still reveals little sign that he might actually learn something from his own "self-censorship".

He looked beyond the approach to politics he taught at the LSE, and now at Leeds, then he could make a few discoveries. The study of politics in most modern institutions presents a reasonable critique of so-called "Liberal-pluralist orthodoxy"; it must know, have rejected the classical image of political man; he might also discover, from a cursory reading of *Political Studies*, the existence of other approaches which, however bland and grey attempt to take the study of politics beyond a mere "value analysis" which, for all its analytic dress is rooted in ideology rather than in any known science.

Professor Miliband's dated "New left" polemics will please only those discomforted by the burdens imposed by disciplined study, and the need for sceptical detachment. A multiple factor approach to the study of politics should include the question of structural analysis, but it should not be a "value analysis" which, for all its analytic dress is rooted in ideology rather than in any known science.

Yours faithfully,
GEOFFREY WILLIAMS
Department of social studies,
Portsmouth Polytechnic.

from Mr Philip Widd

Sir,—Professor Miliband's stimulating article (*THE TIMES* March 19) serves to highlight a problem which is particularly appropriate to the

Education's answers for declining Britain



Sir Alex Smith

Alex Smith looks at the correlations between recent trends in education and Britain's social and economic well-being. He suggests that polytechnics and further education colleges have a key role to play in developing an 'adaptive response'

I recall a very distinguished leader of the Christian church arguing recently that God was reducing our standard of living, for it had been achieved for too long at the expense of the standard of living of others.

That this decline is happening is, I think, unquestionable and, unless there has been some underlying political drift over the last decade or two, it seems to me that the trend goes on whatever the political persuasion of the Government. My purpose here is to try to suggest whether any responsibility for the decline, and therefore for reversing it, can be attributed to education.

Since 1961 expenditure on education and social security has risen considerably, while that on defence has dropped markedly. Education rose from 10 per cent of the total public expenditure in 1961 to over 13 per cent in 1973 and has shown a slight decline since then.

Projections which were delineated in the recent Government White Paper on Public Expenditure, in which the proportion given to education continues the decline started in 1973, are indicative of a sense of disillusionment with education among politicians, but I think that it mirrors a generally held feeling among the public at large of doubt about the performance of the education service.

Is the sense of disillusionment with education, indicated by this loss of preference among the various social services, justified? Perhaps it is; perhaps the politicians are right in their assessment of priorities.

There are two particular aspects of the development trends in higher education to which I would like to draw attention. The first is the rapid growth in the number of people studying for degrees, coupled with the fact that those studying for HNCs and HNDs.

The second is the growth of the number of students taking social, administrative and business studies courses, while at the same time the number taking courses in engineering and technology has declined.

These trends are, I think, alarming enough; yet if one looks more closely at the figures some of the details are even more disturbing. Engineering and technology cover a range of subjects within them which are producing a steady demand in view of its importance.

In advanced courses in further education, for every new student enrolling in 1973 to study production

engineering there were five in economics, 12 in law, 15 in sociology and 40 in business and commerce.

What about education for young people who are already at work, based on day release or block release from their employment? In 1962 the Minister of Education appointed a committee, under the chairmanship of Mr Henricus Heaton, which recommended in its 1964 report that the number of boys and girls obtaining release from employment for further education should be doubled from 250,000 to 500,000, at the rate of 50,000 a year. In spite of this there has been a steady decline since the mid-60s of the under-18s obtaining release from employment. It is a sad story of neglect. The proportion of young workers who get release to study is about 10 per cent of the total workforce. In West Germany it is 85 per cent. This form of education, described in the Henricus-Heaton Report as "vitally important for the future well-being of the nation", has obviously received no support. Priorities have gone elsewhere, to other forms.

Given the choice between expanding the provision for full-time higher education and improving the provision for the day-release student, I know where my preference would have gone. I would have given the day-release student the good quality facilities, the good teachers, the good common rooms, the good class rooms, the good environment, the best teachers too.

The best in education ought to go to those who are already earning their living. I would have made that choice because of a clear conviction that good education must be based upon a partnership between educators and the rest of the community.

Had the education system followed that course, I venture to give my assessment that it would have made a much better contribution

to our social and economic well-being.

We hear much about the Cross National Product, we hear all too little about the gross national waste caused by unnecessary obsolescence, and by the many artifices and illusions of full employment. The reluctance of the young to be involved in such activity is not hard to understand.

Where do we go from here? Do we argue that what is at work is a set of social values according to which people make their own choices, that these are an indication of what is wrong—a message that education is firmly locked into that social value system, trapped in it, and there is nothing that education can do about it?

Or do we take the view that education is a master leadership, that through education we can chart a course which will be an adaptive response and will be our contribution to reversing the trends mentioned above but a correlation is not a causation. The present state of our social and economic well-being clearly cannot be caused by the present pattern of enrolments in higher education. The effects of these trends in higher education have, by our deficit, and high expectations, and by our failure to do all to be given us for uneducated slogan-shouting and abuse which make some of the products of education, and indeed some of the educators, look anything but educated.

For generations now, the prevailing influence in education has been the esteem given to scholastic and academic abilities. That I do not mind I am all against. It is the esteem given to scholastic and academic abilities, that I do not mind I am all against. It is the esteem given to scholastic and academic abilities, that I do not mind I am all against.

We have got to earn that respect, we have got to deserve a favourable approximation of public resources, by our leadership, by our performance, by our deficit, and high expectations, and by our failure to do all to be given us for uneducated slogan-shouting and abuse which make some of the products of education, and indeed some of the educators, look anything but educated.

For generations now, the prevailing influence in education has been the esteem given to scholastic and academic abilities. That I do not mind I am all against. It is the esteem given to scholastic and academic abilities, that I do not mind I am all against.

There is a latent resentment, a rejection even, of the values of an industrial society. Often when one raises this matter in educational circles, one gets the reaction that it is not part of the role of education to produce a "good citizen" or a "good worker" in the industrial society. Education prepares people for careers in various professions—law, accountancy, medicine, teaching, architecture, for example—rather than for the industrial sector. Education prepares people for careers in various professions—law, accountancy, medicine, teaching, architecture, for example—rather than for the industrial sector.

Our present education is the inevitable outcome of the assumption that in determining the content of education the academics know best. The direction of development of education is determined by the outlook, the attitudes of the educators above all, it is determined by their career aspirations, it is attained, much more to fulfilling their career aspirations than to meeting the needs of those being educated.

In offering their particular terms of scholarship, stipend, what is most precious to them, and so our young are less and less equipped for, or interested in, the increasingly difficult assignment of earning the nation's livelihood.

Who will pay for keeping academe healthy?

Helen Tripple discusses a report on the shortage of recreational facilities in universities

The lack of adequate provision of physical recreation facilities in universities is a long-standing problem. It is a problem which has been discussed at the Universities Physical Education Association Conference, which is being held at Southampton University later this month.

Delegates to the conference have before them a report prepared by the association which criticises the University Grants Committee's current scales of provision for physical recreation facilities and recommends larger "norms" which, it is hoped, will enable universities to "utilize their facilities for the greater benefit of the university community as a whole".

Taken with recent research long further support to the "premise that exercise is a significant factor in general health, these 'areas of concern' have been a single problem for university physical educationists. Namely how to maximize the use of existing sports areas to accommodate a community of largely sedentary workers, a very high proportion of whom is keen to take part in physical recreation.

Health considerations aside, a shortage of facilities is the root cause of many of the problems faced by all but a fortunate few university physical education departments. The expansion of student numbers in the late 1960s and 70s coupled with increasing sports participation by staff and members of the local community, has produced acute pressure on existing university sports areas.

How best to cope with these demands and how to provide adequate future facilities at a time of economy were questions which provided the stimulus for the UPEA report. "The days when university facilities were used only by students are gone," the report says; "the whole university and, to an only slightly lesser extent, the local community demand, as of right, to use these facilities."

The report expresses concern over apparent inequalities in the distribution and use of university sports facilities, and recommends the adoption of a "single standard" for the planning and extension of sports facilities to accommodate both students and staff and to facilitate shared-use with the local community.

In the past, policy for university sports areas has been based on the UGC's recommended norms, which are linked to student numbers. Little attention was paid at the planning stages in the 1950s and 1960s to the possibility of university staff and the local community.

The UPEA report points out that the UGC norms were too stringent

not only because they took no account of the whole university population, but also because they have little regard for the diverse range of recreational activities which characterize student sport today.

It is not unusual for physical education departments to receive requests for playing space from student clubs for activities as dissimilar as ice-hockey, fitness training, volleyball, roller skating, dance and aerobics, as well as for the more traditional sports. A composite planning policy is therefore essential at the outset if uneconomic spending on ancillary areas is to be avoided at a later stage.

For this reason, the UPEA report recommends that physical recreation centres in universities be single comprehensive units. So separate the units, as some universities have had to do, increases the capital outlay and recurrent costs and is a disincentive to the planning and programming and staffing.

Problems of programming and security are brought sharply into focus when physical education staff make plans to share university sports facilities with outside bodies. Clearly, it needs good plans to do so, not only for social reasons, but also for economic considerations.

Paradoxically, saturation point is reached in the use of university sports facilities during term time, but in the vacations, sports areas

may be under-used unless a vigorous "dual use" policy is practised.

As the Sports Council recently pointed out, successive Government circulars have stressed both economic and social advantages in dual use. The 1975 White Paper *Sport and Recreation* reiterated the point and stated that "it is wrong if good and expensive facilities are under-used. In a period of financial restraint, in particular, it is important to ensure that the maximum use is made by the community of facilities already available."

Few university physical educationists would disagree with such a policy of shared use, but any scheme of this kind must cost money and the question is, who is to pay?

The second report of the House of Lords Select Committee on Sport and Leisure (1973) supported the view that outside user funds should contribute to maintenance costs. The recent White Paper agreed, noting that any additional expenses incurred in the sharing of facilities should be offset where possible by income from charges.

This arrangement can be made to work to the mutual advantage of both university and local users. These are the sort of solutions which administrators who administer such schemes charge very reasonable rates and are able to share their facilities most successfully, albeit on a somewhat seasonal basis, with groups of



sports enthusiasts drawn from sports clubs, firms, banks and schools, for example.

That is not to say, however, that difficulties do not occur. Access to buildings which were not designed for public use can cause headaches and the maintenance of security in the evenings and at weekends poses formidable problems without the help of extra staff. These are some of the problems that the UPEA conference will have to face.

The author is lecturer in physical education at Southampton University.

NORTH AMERICAN NEWS

MICHAEL BINYON reports
from WashingtonThe Times Higher Education Supplement (London) Room 541
Tel. 202 6386765 National Press Building Washington D.C.World lead in science
'threatened by cutbacks'

America still leads the world in almost all fields of science and technology, but this lead is being threatened by declining Government support for research and development, cutbacks in the number of scientists engaged in research and development and a fall in the number of PhDs awarded in science and engineering.

These are among the conclusions of *Science Indicators 1974*, a comprehensive statistical analysis of the state of American science published by the National Science Board, the policy-making body of the National Science Foundation. Its 240 pages paint the most detailed portrait to date of the health and vitality of science in industry and universities.

Overall, the proportion of the gross national product spent for R and D has declined steadily over the past decade in the United States while growing substantially in the Soviet Union. West Germany and Japan. In 1973 the Federal Government spent 2.4 per cent of GNP, compared with 3.1 for the Soviet Union, 2.4 for West Germany and 1.9 for Japan. The number of scientists and engineers engaged in R and D per 10,000 population declined in America after 1969, though continuing to grow elsewhere. In 1973 this number was 25 per 10,000 in the United States, 16 for West Germany, 19 for Japan and estimated 37 for the Soviet Union.

But America still produced more scientific literature in all fields—except chemistry and mathematics—where Russia is ahead. And nowhere else; American researchers were cited more than that of elsewhere; and American scientists have received more Nobel Prizes in the sciences than any other country.

America, too, had an increasingly positive balance of payments from the sale of technical know-how (patents, licences and manufacturing rights) over the 1960-73 period, with about five times more technical know-how sold to other countries than bought from them.

Looking at basic research—of which the report said that universities rose continually from 1960-74 but allowing for inflation, funds in 1974 were equal to the 1965 level, but the 1974-75 period, lower than the peak years 1969-70.

Federal funds, by taking the 1967 dollar value as constant and again taking inflation into account, declined 13 per cent between 1968 and 1974, the biggest drop being in the physical sciences.

But the Government's share of support continued to increase, and by 1974 accounted for 70 per cent of industry, on the other hand, accounted for only 15 per cent compared with 25 per cent in 1965.

Management course
The first Canadian management development courses for senior university administrators is to be held this August thanks to a grant of \$183,000 by the American Kellogg Foundation.

Teachers for the first course will be drawn from the School of Business Administration of the University of Western Ontario, which is sponsoring the programme jointly with the Canadian Association of University and Business Officers.

Concerned shareholder

MINNESOTA
The University of Minnesota has decided to take an active interest in the affairs of the companies in which it holds shares. Overturning a traditional policy of abstaining from shareholders' meetings, the university has announced it would take a stand on such things as the ecology, strip mining, the B-1 bomber and payments to political parties.

New York prepares to stop more aid

New York City plans to cut off all funds for the 10 four-year colleges in the troubled City University system (CUNY) within two years. The city leaves the responsibility to New York State.

Mayor Abraham Beame said the grant of \$140m a year would be reduced to \$104m next year and eliminated altogether in 1977. The city, however, would continue to provide \$70m in annual support to the community colleges in the system because they were more clearly a local responsibility. This potentially disastrous announcement, however, is being seen

at the City University as a ploy—the opening move by New York City in the complicated bargaining between the city and the State over the long-term financing of the university. One of the city's recurrent arguments is that the State is not contributing as much per student to CUNY as it is to the State University.

In the next few days CUNY will send its long-term proposals to Albany, the State capital, and the Emergency Control Board for New York City will then decide what kind of immediate support to give CUNY.

There is a general expectation

that enough money will be made available to put off indefinitely the first week of the semester paid for by the State.

The proposal the board of trustees will be the plan put forward by Dr. Robert K. Rabin, senior (four-year) college dean, to six, an increase in the number of colleges from eight to six, a tightening up of standards.

The board is likely to list the impossibility of raising something CUNY has been hard against.

College gifts
show
drop of 3.6%

Gifts to American colleges and universities fell by \$80m last year—only the second time since 1957 that voluntary support for higher education has declined.

Figures released last week by the Council for Financial Aid to Education shows that in the 1974-75 academic year there was a net 3.6 per cent drop compared with the previous year.

However, the overall amount was \$2,160m, the fourth consecutive year that the value has exceeded \$2,000m. The drop is explained entirely by a 15 per cent decline in gifts for capital projects. These now account for 39 per cent of the total. Gifts for current spending rose by 5 per cent, and now form 61 per cent of the total.

Despite the economic recession, and the drop in the stock market, one sector of higher education did better than before: 160 public institutions got \$31.5m or 9.4 per cent more than they did last year, and several now appear among the top 10 of all recipient colleges.

Harvard University was still top of the table, and last year was given \$22.4m. The others in descending order were Stanford, the University of California system, Pennsylvania, Yale, University of Minnesota, Cornell, University of Chicago, University of Michigan and the Massachusetts Institute of Technology.

The surprise in this list is the University of Pennsylvania, which has jumped 10 places from fourteenth to fourth in a year. The university has just launched a year fund-raising campaign and last year was given over \$35m. Its place above Yale, which launched its appeal a little later, may not be repeated.

The council's survey covered 986 public and private institutions. The drop in voluntary support came from the fact that the total in 1974-75 was \$2,160m, down from \$2,240m in 1973-74. The drop was due largely to a rapid growth in the number of social science degrees awarded.

At the doctoral level, the annual awards began to fall in 1971, and in 1974 were down for the first time in a decade to about 18,000. The largest decline was in the number of physical science PhDs: science and engineering doctorates as a fraction of all doctorates declined from 64 per cent in 1965 to 56 per cent in 1974.

Included in the report's mass of statistics is a table showing the number of degrees awarded each year. The report said that degrees awarded in 1974 were down 1.5 per cent from 1973, but allowing for inflation, funds in 1974 were equal to the 1965 level, but the 1974-75 period, lower than the peak years 1969-70.

Black admissions
A college which has been accused of bias against black students has been ordered to accept a special Black admissions board because it violated Federal desegregation regulations.

General College in Iowa was advised by the Department of Health, Education and Welfare that the board set up to decide on applications from black students was not acceptable. The board was made up of white students and faculty members.

A similar board at the University of California at Davis has just been ordered to accept a special Black admissions board because it violated Federal desegregation regulations.

Canadian dons
urged to
'back Canada'

Canadians do not know themselves or their country well, they lack a feeling of national identity, they ignore the Canadian dimension of learning and research—and they have not taken much interest in or even recognized what could be called Canadian studies.

These are the principal findings of two thick volumes of a report by the Commission on Canadian Studies which have just been released, entitled *To Know Ourselves*.

The report says this neglect has had disastrous effects: the Canadian has been unable to be explicit in the face of his own ignorance of his own country. Canada has failed to make itself known or understood abroad and no real Canadian cultural tradition has developed.

Universities bear much of the blame, says the report. They have neglected problems relating to Canada and have treated Canadian-oriented courses and research with "a scepticism if not with outright disdain". There must be a serious and sustained effort to promote Canadian studies, examine the Canadian dimension in the university curriculum, and build up a national system of research.

The report—which has still to be published in full—also goes to the heart of the most sensitive issue in the Canadian academic world today. This is what would be called the "nationalist" issue: a wish to be independent from American assumptions and influences but an inability to find enough qualified native academics to staff universities and centres of learning.

The press has seen it as another manifestation of the prevailing anti-American feeling, but in fact it is a carefully considered and well-argued case for the importance of Canadian studies. It is not so much that of de-Americanization of our universities as that of selling Canada to Canadian academics.

The commission, chaired by Thomas Sumner, founding president of Trent University in Ontario, was set up in 1972 by the Association of Universities and Colleges of Canada with an impressive array of Government and Foundation support.

Its mandate was unexpectedly long: more than 2,500 people attended the public hearings, and received more than 1,000 submissions and 30,000 letters from individuals and organizations.

The question the commission constantly faced was: why are we concerned with Canadian studies? Many people thought they were of dubious scholarly value, others that they had no legitimate place in a university.

There has been little academic action yet, partly because of a head-on clash with the establishment of a rival organization, the South African Federation of English-speaking Students (Safes).

Launched at the University of the Witwatersrand by students who, in the first place, object to the present system of compulsory affiliation to Nussas, Safes has set up committees at the University of Natal, Rhodes, and the University of South Africa.

Iran tops 'foreigners' league table
An estimated 219,721 foreign students were enrolled at American colleges and universities last year, according to the Institute of International Education. The figure includes 11,123 immigrants and 208,600 exchange students.

The report also said that the number of foreign students in the United States was down 1.5 per cent from 1973, but allowing for inflation, funds in 1974 were equal to the 1965 level, but the 1974-75 period, lower than the peak years 1969-70.



Moultie: Subject for study

In the university curriculum report says. One of the main points was that there were too many Canadian studies courses, and that the quality of many of them was poor.

But this was not the only point. Many Canadian scholars did not think the country was a subject for serious study or research. The report says that the Canadian dimension in the university curriculum was poor.

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Republic of Ireland

Big fee rises highlight grants anomalies

from Peppy Barlow

DUBLIN
The substantial increases in university fees budgeted for next year—the latest rises were announced by University College, Cork, last week—look like providing material for a more than usually acrimonious debate about the financing of higher education in the Republic.

The Cork fees have gone up by an average 16 per cent, and the meeting of the college's Governing Body which took this decision—rejecting an attempt to increase them by 20 per cent—was severely criticised by students, who, at one stage, occupied the staff restaurant during the governors' lunch.

Earlier, the fee increase had been opposed by the college's academic staff association—which admittedly does not stand to suffer financially, whatever the level is—eventually, the university authorities, for their part, strenuously insisted that the increase will be substantially less than the anticipated rate of inflation, and that fees are in effect being reduced in real terms.

The chief target, both of the student protests and the university authorities' complaints about Government parsimony, is the current higher education grants scheme. This asks only about a quarter of university students, and a far smaller proportion of students in other third-level institutions, to accept a means test.

At one level, the complaints are levelled at the amount of the grant, which has in fact fallen in real terms since it was first introduced in 1968, and which operates on the basis of a ludicrously low upper income limit for the parents of applicants.

Given the inflation that has taken

place over the past few years, this has effectively excluded many children from the grant, and has made it impossible to pay for them to attend a third-level educational institution.

Second, attention is being focused on some of the major anomalies in the scheme. For example, although the appropriate level for entrance to arts faculties in the universities, and to a number of other faculties as well, remains at the level of two honours marks in the Leaving Certificate examination, no grant is payable to any student who has not achieved honours standard in a minimum of four subjects.

This discriminates, for example, against the poorer student who may have received two or even three honours grades in his Leaving Certificate examination, and who qualifies for university entrance but cannot afford to take up his place.

As against this, the two-honours student whose parents can afford to pay for his university fees is thereby automatically entitled to the benefit of the overall state subsidy to the universities, which is currently running at almost £1,000 a student a year.

This is a problem which will be resolved only by lowering the grant eligibility level or by raising university entrance standards—and despite growing pressure on space and staff the universities have so far been unwilling to adopt the latter course.

The Higher Education Authority, which has suggested that fees should form a stable 25 per cent of overall university revenue, is unlikely to see much progress towards this objective until these fundamental anomalies have been removed.

South Africa

'Hot lab' for virus research

from Louis Hatz

JOHANNESBURG
South Africa will in the near future become the third country in the world to have a "hot laboratory", an institution for research into extremely dangerous and virulent infectious viruses.

The only two other countries to have such a laboratory, according to the Ministry of Health in Pretoria, are the United States and Britain.

The laboratory is to be built at Rietfontein near Johannesburg when the Government officially takes over the Follyhill Research Foundation centre there on April 1. The centre would then operate as part of a new National Institute of Virology.

Among the activities of the institute would be the manufacture of polio, yellow fever, measles and smallpox vaccines, and, for the first time in South Africa, the production of a monovalent vaccine.

Meanwhile, the first South African

can medical school exclusively for the training of Black doctors and dentists, which is to be built at a cost of R30m (£15m) in the Tlamekane area near Pretoria, is expected to be completed in 1982. The first graduates are due to qualify in 1988.

The university, which will be autonomous, will have room for 200 medical and 50 dental students and 150 dentists and 35 dentists annually. The institution will be open to students from all the homelands, while applications from Black students will be considered on merit.

There are at present 71 qualified Black doctors, 19 Black pharmacists and some 18,700 Black nurses working in the homelands. There are no Black dentists or veterinary surgeons. The homelands, with a total population of about 10m, have 20,000 registered doctors compared with 70,000 in the White areas.

Rival student union body formed

JOHANNESBURG
Immigrant discontent among "conservative" students at English-medium universities with the policies and recent activities of the National Union of South African Students (Nussas)—some of whose former leaders are shortly to face trial under the security laws—has come to a head with the establishment of a rival organization, the South African Federation of English-speaking Students (Safes).

Launched at the University of the Witwatersrand by students who, in the first place, object to the present system of compulsory affiliation to Nussas, Safes has set up committees at the University of Natal, Rhodes, and the University of South Africa.

Sweden

PhDs to pay taxes on means-tested grants

A new system of taxable means-tested grants worth up to \$3,760 (£2,830) a year will replace existing PhD scholarships worth \$12,250 (\$kr) if an Education Ministry proposal is accepted by Parliament.

The grants, which would number 1,350—the same as at present—would correspond in size with the recently increased State adult study subsidies and replace the present system, in operation since 1969, from July 1 this year.

Australia

Pay increase—but nothing on top

by John Kircaldy

SYDNEY
As a result of a national wage agreement on February 13, the Australian Universities Commission is to pay a 6.4 per cent salary increase to academic and related staff. The arbitration commission granted the rise to offset the general rise in the cost of living.

The new salary scales took effect from February 20 and are as follows: Professor, AS25,955 (£16,228); Associate Professor, AS22,247; Senior Lecturer, AS17,569-AS20,421; Lecturer, AS12,835-AS17,229; Tutor, AS9,127-AS15,975 and Teaching Fellow, AS10,156-AS10,840.

Although Australian academics have benefited with other wage and salary earners from the national wage decision, the Academic Salaries Tribunal recommended on February 24, against any extra interim increases in academic salaries before the tribunal completes its own inquiry in June.

The application for an interim increase had been made by the Federation of Australian University Staff Associations (FAUSA), the Federation of Salaries and Associations of Australian Vice-Chancellors (FSAAC) and the Australian Vice-Chancellors' Committee.

The tribunal decided that "at this time it is not desirable that there should be any adjustment to academic salaries which would be derived from national wage decisions".

Although the tribunal was created at the instigation of the two staff associations, they have criticized its workings, in particular because there is no avenue of appeal against its decisions.

Mexico

More funds for graduate work

from Emil Zubryn

MEXICO CITY
A total of \$17m pesos (£20m) has been earmarked for research this year by the National University of Mexico, compared with 40m pesos in 1975. Research now accounts for 14 per cent of university funds.

Of the 300,000 students now making up the campus population, only 10,000 are postgraduate, while the university has 7,500 researchers in all fields and produces about 50 per cent of Mexico's research output. The university is hoping eventually to have 30,000 researchers.

However, many research projects at the National Polytechnic Institute have had to be abandoned for lack of funds. A spokesman said: "resources for scientific and technological research have always been insufficient and growing budgets to attend to the needs of 140,000 students leave little money available for research projects".

As a result Mexico still has to import technology, patents and processes from abroad with the cost estimated at approximately 5 billion pesos annually.

Poly gets £2.2m help from Britain

Britain has approved a loan of £2.2m from its aid programme for the expansion of the Kenya Polytechnic in Nairobi. The money will go towards new buildings, extensions and alterations to existing buildings and technical equipment and advice.

The Kenya Polytechnic is the largest institution in the country, providing technician level training and education. Under a new four-year development plan it is hoped to increase the polytechnic's output from 1,200 to 2,000 qualified students a year. Major departments will be in new business studies, mechanics, building and science.

The loan, at 2 per cent interest, is part of the £17m capital aid Britain made available to Kenya for its Development Plan for the period 1973-76.

West Germany

'Witch-hunt' fear as Bill to bar radical academics fails

from Günther Kloss

The Extremist Bill, a measure that sought to lay down uniform criteria for the employment of so-called "political extremists" in West Germany's public service (including in her institutions of higher education) was finally rejected last month when the Bundestag, the second chamber of the Federal Parliament where the CDU/CSU Opposition has a majority, voted against it. The SPD/FDP Coalition in the Bundestag, the lower chamber, approved the Bill last October. Since then

with such "extremists". The academic community, to whom the idea constituted a violation of constitutionally guaranteed basic rights and academic freedom, students, and some trade unions have since been vociferous in their opposition to the so-called Extremists' Decree.

It must be said that the academic community has every reason to be alarmed. There are now a substantial number of cases in universities where the long drawn out official investigations and hearings have taken place and where appointments could not be confirmed, or had to be terminated, for what were essentially political grounds.

In the wider context the overall figures are appalling. It has been officially confirmed that over 500,000 cases have been examined by the Office for the Protection of the Constitution during the past four years and out of these more than 300,000 individuals have been refused appointments. The Constitutional Court's famous judgment of July, 1975, however, did little to clarify the extremist issue.

The court, which was concerned with the appointment of *Beamte* only, refused a civil servant's special requirement of loyalty towards the state. While stating that a candidate's membership of an extremist group might be a factor in deciding on his or her suitability for a Civil Service appointment, it ranked this at the same level as the professional qualifications traditionally demanded from an applicant for a particular job.

The judgment thus did not provide a clear indication for Parliament, which had waited for the court's decision before proceeding with the Government Bill. Both sides were able to claim that their views had been vindicated.

Now that the Bill has failed, the political parties are convinced that some form of screening is in order, especially for those public servants who hold the special legal status of *Beamte* and who, according to German civil service law, are required to accept a special loyalty to the Constitution.

The point of departure was: should each case be examined individually on its merits and membership of a Party hostile to the Constitution (though not itself declared unconstitutional by the Federal Constitutional Court) be only one element in the overall assessment of a candidate's suitability for a post? (This is the SPD/FDP view incorporated in their now rejected Bill.) Or should mere membership of such an organization by definition justify rejection of an application? This is the CDU/CSU line and was the core of their counter-proposal introduced in the second chamber.

The possibility that an individual, simply on the basis of a by and large secret examination by the bureaucracy of his past political record, may be barred from public employment or even deprived of his livelihood—the West Germans call this *Beaufschlagung*—has been vigorously criticized.

In January, 1972, Herr Willy Brandt, then Federal Chancellor, and the prime minister of the *Länder* agreed on regulations to deal

Norway

Oil pollution probe launched

A major five to seven-year research programme into oil pollution is to be financed by the Environment Minister and administered by a specially appointed Government committee in cooperation with the national research councils.

The programme, to be carried out in universities and research institutes, will concentrate on marine biology, ocean and coastal currents, the way oil degenerates in the North Sea and the side-effects of pollution control, especially oil dispersants.

An initial grant of 1m Nkr (£250,000) has been allocated for the programme this year.

The Institute's objective is to give workers a training which will help them to do a better job and advance them in their respective fields.

Courses will last 40 weeks, after which students may go on to university if they qualify.

The University of Sri Lanka is launching a Workers' Education Institute. The first course is expected to begin with the new academic year next May.

Students will come mainly from among unskilled workers—80 per cent from those engaged in manual labour, 10 per cent from clerical workers and 10 per cent from technicians.

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Sri Lanka

Workers' institute for unskilled

COLOMBO
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BOOKS

Traditions of epic poetry



This prophecy entitled "Terrors of the Telephone" appeared in the New York Daily Graphic in 1877. From the Tube of Plenty: The Evolution of American Television, by Erik Barnouw, published by Oxford University Press at £8.50.

The art of Greece

A History of Greek Art, volumes 1 and 2
by Martin Robertson
Cambridge University Press, £25.00
the set
ISBN 0 521 20277 9

Most histories of Greek art are didactic; Professor Robertson's is more reflective. After a short prologue on art in Greece before the Iron Age and two chapters, also short, on the Early Iron Age and the seventh century BC he settles down to business, considering in turn Ripe Archaic, Late Archaic with Early Classical, High Classical, the earlier fourth century, the transition to Hellenistic, and in a short epilogue the effects of Greek art on Rome. The second volume contains notes, bibliography, illustrations and indexes. Though not pressed for space—the text is more than 400,000 words long and the notes, mostly references, add a fifth more—the discussion is more or less confined to sculpture and vase (not vase) painting and even of those subjects is not entirely systematic.

What Robertson does is to illustrate major and some minor trends by detailed description and consideration of particular works, with unusual attention to relevant passages in ancient literature and to parallels or reflections in European art since the Renaissance. Occasionally he neglects aspects which might have included—his instances of the High Classical management of space in the Parthenon, for example, are not the best. And he shows a group of Kouros figures dated which, though not worthy, are convenient indicators of the apparent sequence of related and contemporary works. In general, the book is rich in detail and the illustrations are of high quality. It is a pity that the illustrations are not in colour. The book is a valuable addition to the literature of Greek art and is a must for all students of the subject.

Spontaneity and Tradition: A Study in the Oral Art of Homer
by Michael N. Nagler
University of California Press, £5.85
ISBN 0 520 02245 9

Archery at the Dark of the Moon: Poetic Problems in Homer's Odyssey
by Norman Austin
University of California Press, £9.60
ISBN 0 520 02713 2

Most Homeric scholars today believe that the *Iliad* and the *Odyssey* stand at the end of a long tradition of oral (improvised) poetry. The question is whether this conclusion is based on a radical appreciation of the two poems. Two recent studies, by Michael N. Nagler and Norman Austin, confront the problem in the full fashionable panoply of literary criticism: Gestalt psychology, generative linguistics and "structural" analysis. Both authors firmly believe that each poem was composed as an entity essentially as we have it, and both share the unjustified idea that accepting the view that the two poems are compositions involves denying any considerable originality to the poets who composed them. Both seem to accept tacitly that they were composed by the same author.

The studies of Milman Parry and Albert Bates Lord, first widely known in the 1930s, showed that the two Homeric epics have one characteristic in common with the modern improvised heroic poetry of Yugoslavia: the regular use of "formulae", principally standard combinations of the name of a well-known figure in a narrative with a conventional epithet ("swift-footed Achilles" for example) and standard phrases for recurring actions ("To him spoke in reply"). These appear to provide the oral poet with points d'appui in his improvisation on any particular occasion and perhaps also help his audience to follow the main figures in his narrative. Present consensus accepts this feature as proof that the Homeric epics are improvised poetry or else the work of one or more poets who had learnt the oral technique but made use of writing in composing. Greece apparently acquired the alphabet about 700 BC, the likely time for the poems' composition.

The point of controversy has been the extent to which an oral poet, working with traditional formulae, may show originality in a particular improvisation. Nagler, in a particularly concerned with more refined analysis of the use of formulaic expressions in the Homeric epics and other early Greek hexameter poetry, especially with "epithets": how have modified formulae which they had learnt from their predecessors,

Little has been published accessibly about the way in which modern oral poets, for example in Africa, actually work when improvising.

The nineteenth-century style of analysis of "Homer", which assumed gradual expansion of two original main "sagas", is virtually extinct, and Austin wastes time and energy in inveighing against it. The *Odyssey* is a unitary composition is now one of degree. An early Greek poet who decided to compose an epic of unprecedented length would presumably have known many stories about parts of the tale of the War for Troy which he was already used to improvising, though not with verbatim repetition at particular "performances". He might have incorporated such shorter poems with little change in longer epic, and in episodic narrative such incorporation need not have been inartistic. Both Nagler and Austin, however, believe that the two poems were creations *de novo*, though making considerable use of formulaic expressions and following the content of pre-existing stories in the Trojan cycle. In both their books only a reader who knows the Greek alphabet can assess what is said about sentence, cadence, etc. in the verse, are generally frustrated. Accurate transcription into Latin script would have been helpful.

Professor Nagler first discusses the "traditional phrase" (the "formula"). He is concerned to show that the conventional epithets are often used with significance (which is already widely accepted) as in the well-known passage where Achilles' hands are described as "man-slaying" as Priam kisses him in his appeal for the return of the body of his son Hector. The experiments in assembling formulae in verse between the two epics are generally frustrated. Accurate transcription into Latin script would have been helpful.

The novelist's surrogate

Doubling and Incest/Repetition and Reverence: A Speculative Reading of Faulkner
by John T. Irwin
Johns Hopkins University Press, £5.80
ISBN 0 8018 1722 6

John T. Irwin's book is a speculative reading of Faulkner's novels. It is a study of the relationship between the novel and the myth. Irwin argues that Faulkner's novels are a form of myth-making. He discusses the use of doubling and incest in Faulkner's novels, and how these elements are used to create a sense of myth. Irwin's argument is that Faulkner's novels are a form of myth-making, and that the use of doubling and incest is a key element in this process. He discusses the use of doubling and incest in Faulkner's novels, and how these elements are used to create a sense of myth. Irwin's argument is that Faulkner's novels are a form of myth-making, and that the use of doubling and incest is a key element in this process.

thesis, in a relatively short but densely argued book, takes him with a second novel back to Faulkner's second novel (*Mosses from an Old Man's Back*, 1927) and forward to one of his last (*A Fable*, 1954), as well as touching usefully on others by the way. He also finds convincing parallels with *The Fall of the House of Usher* and *The Fall of the House of Usher*. Irwin's argument is that Faulkner's novels are a form of myth-making, and that the use of doubling and incest is a key element in this process. He discusses the use of doubling and incest in Faulkner's novels, and how these elements are used to create a sense of myth. Irwin's argument is that Faulkner's novels are a form of myth-making, and that the use of doubling and incest is a key element in this process.

The artist, Irwin claims, wants to "use the temporal medium of time" to prove that through the process of substitution and repetition, time is not really irreversible. Faulkner's "repetitions" and "doublings" are a form of myth-making, and that the use of doubling and incest is a key element in this process. He discusses the use of doubling and incest in Faulkner's novels, and how these elements are used to create a sense of myth. Irwin's argument is that Faulkner's novels are a form of myth-making, and that the use of doubling and incest is a key element in this process.

Walpole's bête noire

The Tory Crisis in Church and State, 1688-1730: The Career of Francis Atterbury, Bishop of Rochester
by G. V. Bennett
Clarendon Press: Oxford University Press, £10.00
ISBN 0 19 822444 3

A biography of Francis Atterbury would be a welcome event in any circumstances, but coming as this one does in the form of a related treatment of ecclesiastical politics in England, from the trauma of 1688, through the turmoil of the 1690s and 1700s, to the torpor of the Walpole era, it is especially valuable. There is much that is amusing and instructive about Atterbury's personal career—made by his arch unpopularity at Caroline and Christ Church. But more importantly, with his explanation of Atterbury's part in such controversial affairs as the Convocation Crisis and the Sacheverell Trial, the author does much to illuminate the role of religious issues in secular politics. Moreover there are some fascinating insights and observations, for instance, the tantalizingly short paragraph on the curious sequences of toleration for the church which were transformed after 1689 from a clerical weapon against dissent into an episcopal weapon against the parish clergy, with significant effects for the political attitudes of the latter.

The learning deployed by Canon Bennett is highlighted in his treatment of an episode of particular interest—the Atterbury plot of 1722, an affair big with consequences not merely for Atterbury himself, whom it relegated to exile and misery, but for Walpole and his system, which it markedly helped to establish. It may be doubted whether any problem in eighteenth-century politics needs as deft a touch as that of Jacobitism, or whether any corpus of manuscript requires more speculation than the Stuart

papers. Yet the author has clearly mastered the latter, and produced a plausible solution to the former. The result differs in emphasis and tone from that presented for example, in the first volume of the *History of Parliament: House of Commons, 1713-4*, but it is a convincing one more the less. Inspired rather by disillusionment with George I than attachment to James III, handicapped equally by the divisions and hesitations which prevailed among the English Jacobites, and the incompetence and double-dealing of the Pretender's advisers on the continent, the conspirators would have needed more luck and certainly more foreign support than they got, to offer a real threat. As it was, it is clear from Bennett's reconstruction of the Atterbury plot that it was a feeble affair, hardly taken seriously even by Atterbury himself. And though Walpole lifted every stone and employed every device to crush hard evidence, he discovered remarkably little except against the absurd and ineffectual Christopher Layer, who played no part in serious Jacobite activities. Yet Walpole was able to turn the affair into a national emergency, and in so doing to carry Parliament with him, to the extent of suspending *habeas corpus*, encamping troops in Hyde Park, and above all exiling Atterbury himself without benefit of legal trial. The result is to enhance the reputation of Walpole as a repellent and ruthless politician, and Bennett's account amply reinforces Professor Plumb's picture of Walpole during the South Sea crisis. In 1721 Walpole had been the Secretary of State, and in 1722 he was Grand Inquisitor, and in each role his success was to take him giant strides nearer total command of Closet and Commons, and the longest premiership in British history. It is a pity that Atterbury, in his role as a notable hammer of Whiggery, should have contributed so substantially to the triumph of the Walpolian oligarchy.

Paul Langford

An unnatural growth

Industrial Imperialism in Italy 1908-1915
by R. A. Webster
University of California Press, £14.80
ISBN 0 520 02724 8

A somewhat disconcerting note at the beginning of this book says that it was first published in Italian by Einaudi, and the English edition has been abridged by Mrs E. Scrimshaw. It is a pity that the author's thoughts and wording substantially intact. As it is a very important book, libraries will probably have to buy both editions.

Heavy industry in Italy grew up unnaturally, because domestic sources of raw materials and power were limited, and the main impetus towards growth was not economic but rather the search for prestige and great-power status. This in turn resulted in heavy state subsidization of aliphatic steel, the railways, and arms manufacture. Industrialization took place uneconomically, at far greater expense than was strictly necessary, and as it remained dependent on continuous payments from public funds, powerful pressure groups came into existence which were bent on expansionist policies and ultimately on war. These pressure groups had a decisive effect on Italian history.

Professor Webster develops this theme with great brilliance, and he has access to bank archives which no one before him has been (some of them, so rumour has it, have since been destroyed by fire). But he himself puts more emphasis on a second theme and one which does not carry equal conviction, namely that the desire for liberalization in Italy was largely due to the fact that the whole industrial establishment in the Balkans and Asia Minor, without accepting such an extreme value of this admittance of the great research in showing that at all events some bankers and industrialists

in Italy were imperialists. No one previous has gone so deeply into the Balkan schemes of the enigmatic Giuseppe Volpi, "the last Doge of Venice", nor has anyone until now shown so clearly the close connexion between the Italian Foreign Office and the world of banking and industrial finance. But the impression remains that the heart of the matter lies elsewhere. The more serious Italian imperialism concentrated on Africa, about which Italy has said here, but where Italian banks and industrialists were markedly reluctant to invest. Even in the Balkans, few industrialists and financiers imagined that there were great profits for the taking, and Volpi's idea of a trans-Balkan railway was a paper scheme that could hardly be intended seriously except as another excuse to get handouts from Rome. What the main body of real imperialists wanted was not so much profits as prestige. They assumed that, which could hardly be intended seriously except as another excuse to get handouts from Rome. What the main body of real imperialists wanted was not so much profits as prestige. They assumed that, which could hardly be intended seriously except as another excuse to get handouts from Rome.

Italy until 1915 formed part of the Triple Alliance with Germany and Austria, but in 1915 she suddenly changed to enter the First World War alongside France and Britain. Webster explains that at first Italy had inevitably been dependent on Germany for the development of her electrical, chemical and mechanical industries. But he also shows how, already by 1911, the pattern was becoming one of competition with Germany and Britain. In particular, Italian arms manufacturers were set up with Schneider-Creusot and Vickers. Armstrong, while in the Balkans and Ottoman Empire a strong rivalry with Austria and Germany was maintained, but in the end the change of alliance in 1915. This is one of the ways in which this book will alter a number of accepted attitudes about Italy in the Glorious period. It remains to say that it is very attractively written.

Denis Mack Smith

BOOKS

Our first 'Prime Minister'

Sir Robert Walpole
by Betty Kemp
Walden & Nicolson, £4.25
ISBN 0 297 77067 5

Robert Walpole sat in the House of Commons for 41 years. For the first 20 years he was an active and rising MP, who intermittently held various offices of state. Then, from 1721 to 1742, he was Lord of the Treasury and generally reckoned the first and therefore the longest-serving Prime Minister in British history. During these years Walpole bestrode the political world like a Colossus and was widely referred to by both friends and enemies as "the Great Man". No biography of 40,000 words can possibly do justice to him, but, even after making due allowance for restrictions of space, Betty Kemp's effort can only be regarded as unsatisfactory.

Although he was in power so long, Walpole did not carry through any extensive legislative programme. Indeed, his most important measure, the Excise Bill of 1733, had to be withdrawn because of the opposition it encountered. Walpole's career therefore has to be judged by another criterion than legislative achievement. His real importance lies in his success in safeguarding the Protestant succession, in preserving the balanced constitution, and in establishing political stability. This success was only made possible by the creation of a harmonious relations between Court and Commons. Walpole succeeded where others had failed, partly because he enjoyed more favourable circumstances. But the absence of an effective Tory party and France's desire for peace cannot fully account for his success. His own abilities were of a high order and any biographer must do justice to his skill as a courtier and a

political manager and in his financial and foreign policies. Betty Kemp seeks to measure Walpole's achievement, but she does not tackle any of these important questions satisfactorily. She ignores Walpole as a courtier and she never explains the skillful methods which he used to manage Parliament. While she acknowledges that Walpole depended to some extent on placemen, she never explains the size and nature of the Court and Treasury party nor does she deal with Walpole's ability to manipulate the procedures of Parliament in order to outwit his opponents. Indeed, there is never any assessment of the basis of Walpole's support in Parliament and in the country. Her treatment of Walpole's financial policy is more effective, but her discussion of his foreign policy is decidedly thin and inept.

Instead of tackling these central questions in some detail, Betty Kemp concentrates on four other aspects of Walpole's career: his personal qualities, his position as "Prime Minister", his constitutional differences with Bolingbroke, and his attitude towards the balanced constitution. On these topics she is more enlightening. Her discussion of Walpole's character is the best thing in the book, but even her discussion of the opposition to Walpole entirely fails to make any reference to the contribution of such distinguished writers as Swift, Pope, Gay and Fielding. To claim that an author has failed to tackle the right questions and that she has not succeeded in particular historical questions is a scholar whose expertise lies in another area. This cannot explain the evident shortcomings of this book, for Betty Kemp is an Oxford scholar, well known for her work on eighteenth-century politics, which makes her failure with this subject all the more surprising.

This book is one of a series of short biographies of British Prime Ministers. In such a series the publishers or general editor sometimes select an author with little historical training or a scholar whose expertise lies in another area. This cannot explain the evident shortcomings of this book, for Betty Kemp is an Oxford scholar, well known for her work on eighteenth-century politics, which makes her failure with this subject all the more surprising.

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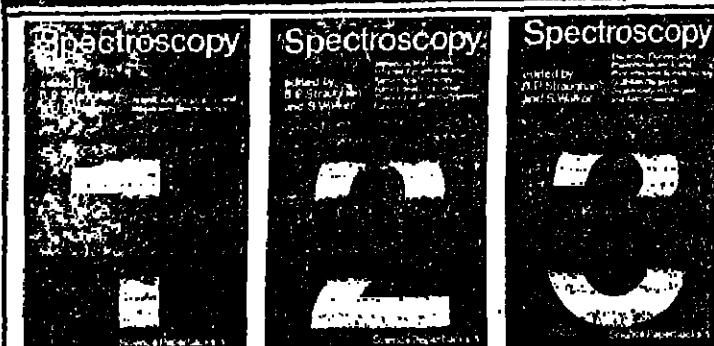
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Biomechanics

Mechanical Design in Organisms
by S. A. Wainwright, W. D. Biggs, J. D. Curry and J. M. Gosline
Edward Arnold, £8.50
ISBN 0 7131 2502 0

At the beginning of this century, the study of comparative morphology was the typical means of expressing the new awareness of the phylogenetic relationships between living organisms; but with later developments the study of anatomy sank into comparative obscurity. Over the past decade, however, phenomena-like, the subject has acquired a new respectability. This has been accompanied by an experimental approach to the problem of the structural mechanics of whole organisms and the way in which different materials are used in the pursuit of strength, speed and lightness.

In this emergent subject, materials science and mechanics from physical sciences meet comparative anatomy and physiology from the biological sciences. The process has been aided by two immensely readable books, *The New Science of Strong Materials* by J. E. Gordon and *Animal Mechanics* by R. McNeill Alexander, which have provided a solid theoretical and pragmatic basis for the subject even though they have been the inspiration for much later research.

With *Mechanical Design in Organisms* we have an altogether more comprehensive approach to one area of the subject of biomechanics. The first part deals with materials, first from the standpoint of mechanical engineering and then with special reference to materials from living systems and their properties in tension and compression. A shorter section considers structural elements theoretically and then with particular reference to the problem of support in rigid and flexible skeletal systems and the optimization of design. The short final section considers the effect of the environment on design.

There is much to commend and a little to criticize. My major disappointment was with the balance; over half the text is devoted to materials and, while this is done well, it would have been appropriate to devote more attention to the structural design of levers and other structural elements.

A problem arises with blending the styles and approaches of four authors and two disciplines. As a biologist, I found the sections on the mechanical principles hard going but essential. The difficulties are increased by the use of some sixty different engineering symbols which tend to be defined at rare intervals and to bob up in unexpected places—there is a list of the symbols at the beginning of the book which would recommend the reader to photocopy that page and use it as a bookmark.

The authors claim the book to be evangelical and in one important respect they are very successful—large parts of the text are fascinatingly well-written and immediately accessible, which is necessary to carry the reader into the more awkward areas. In places, there are flashes of humour, in others, important points are made with clarity and precision.

This is an extremely useful book and is both well designed as a source of information. There is a detailed bibliography which works both from the text and as an author index into the text. The text is a great deal of cross-referencing between sections and chapters and many of the excellent diagrams are detailed. Even so, it is a book that a reader will have to learn to use, to exploit its very possibilities as a framework for further research. This is a first textbook in this growing field, this is an important mixture of comparative anatomy, which will be of use to biologists, and a book for the development of the subject.

H. C. Bennett-Clark

BOOKS

Smooth muscle

Visceral Smooth Muscle, its Structure and Function
by Henry Huddart and Stephen Hunt
Blackie, £5.10
ISBN 0 216 90065 7

In *Visceral Smooth Muscle, its Structure and Function*, Henry Huddart and Stephen Hunt have succeeded in covering a very wide field in a concise and usually clear manner. The book, only 181 pages long, is supplied with an excellent list of references, which enables advanced students not only to get a general impression of the subject matter, but also to study in depth any topic they may be specially interested in. In addition to the references to original papers, the titles of one or two reviews are given at the end of each chapter; this is particularly valuable where the chapter can only deal briefly with a controversial topic.

The authors are particularly successful in their presentation of the chapters on innervation and on neuromuscular junctions and transmitter substances. The very involved system of innervation of vascular smooth muscle is described in a fairly simple way and is aptly illustrated by a number of schematic diagrams. It is a pity that the micrographs are not always of the same high quality; even so, some judiciously placed arrows pointing to the relevant structures would clarify some of the pictures.

The chapter on the proteins of visceral smooth muscle is not so successful as the others, and unfortunately does not provide a reference to a relevant review (such as the chapter on vertebrate smooth muscles in *Mechanism of Muscle* by D. M.

Needham, Cambridge University Press, 1971). The chapter emphasizes sufficiently the differences which exist between the proteins of vertebrate smooth muscles and those of invertebrate smooth muscles. It should be noted that the actomyosin of smooth muscle can be extracted in solutions of low ionic strength and that it is only muscle actomyosin that can be extracted at low ionic strength. The *in vivo* structure of smooth muscle is a very controversial topic and it is unfortunate that it is not accepted as a model which has been rejected by many of the authors.

The authors are particularly successful in their presentation of the chapters on innervation and on neuromuscular junctions and transmitter substances. The very involved system of innervation of vascular smooth muscle is described in a fairly simple way and is aptly illustrated by a number of schematic diagrams. It is a pity that the micrographs are not always of the same high quality; even so, some judiciously placed arrows pointing to the relevant structures would clarify some of the pictures.

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Ahmadu Bello University NIGERIA

Applications are invited for the following (P), Reader (R), Senior Lecturer (SL) and Lecturer (L). Additional posts are shown below where applicable. Applicants are advised to indicate clearly the Position, Faculty/School and Department for which they wish to be considered and their own field of specialization.

I. INSTITUTE OF ADMINISTRATION

1. Department of Business Administration:
P & R & SLS/LS.
2. Department of Accounting:
P & SL/L in Accounting/Finance.
3. Estate Department:
Estate Civil Engineer and Security Officer.
4. Department of Research and Consultancy:
P & Senior Research Fellow and Research Fellow.
5. Department of Administrative Studies:
P/R & SL & L in Quantitative Techniques/Research Methodology and Behavioural Sciences; Financial, Personal, Project Analysis and Public Enterprises/Management and Accounting.

II. INSTITUTE FOR AGRICULTURAL RESEARCH/FACULTY OF AGRICULTURE

1. Department of Agronomy:
Senior Research Fellow/Research Fellow in Crop Physiology/Cereals Agronomy/Agronomist Botany.
2. Department of Agricultural Engineering:
Principal Research Fellow/Senior Research Fellow in Farm Mechanization/Soil and Water Management Technology/Post Harvest Technology/Structures for Livestock.
3. Department of Agricultural Economics and Rural Sociology:
P/SL/L Senior Research Fellow in Production Economics/Agricultural Marketing/Farm Management/Irrigation Economics/Mathematical Economics/Econometrics.
4. Department of Crop Protection:
Senior Research Fellow and Research Fellow in Agricultural Entomology/Plant Pathology and Crop Protection.
5. Department of Soil Science:
SL.

III. FACULTY OF ENGINEERING

1. Department of Civil Engineering:
SL/L in Structural Engineering/Transportation Engineering/Soil Mechanics & Foundation/Water & Public Health Engineering.
2. Department of Land and Quantity Surveying:
SL/L in Building Construction/Design Economics/Building Services/Surveying.
3. Department of Electrical Engineering:
P/R/SL in Power Systems/Electrical Machines, Control Systems/Industrial Electronics Telecommunications.
4. Industrial Technology Training Centre:
Director specialising in Workshop Safety/Benchwork, Processing and Joining Materials, Civil Engineering Technology/Industrial Production.

IV. FACULTY OF ENVIRONMENTAL DESIGN

- Department of Building:
(i) SL (ii) P/SL (for 1976/77 session) in Building Technology and Construction/Structures/Construction Management/Quantity and Estimating Land Surveying.

V. FACULTY OF ARTS AND SOCIAL SCIENCES

1. Department of Government:
SL/L in Public Administration & Political Theory.
2. Department of History:
L in Archaeology, Pre and Early History (Africa).
3. Department of English and Modern Languages:
P of French and SL/L in Linguistics/Applied Linguistics/T.E.S.L. African Literature/French Phonetics/Franco-phonetic African Studies/Drama in Education, Media or Film, Hausa/Arabic.
4. Department of Sociology:
P & SL/L in History of Sociology/West African Archaeology/Criminology/Demography/Sociology of Medicine/Sociology of Industry/Quantitative Methods.
5. Department of Economics:
P/R & SL/L in Mathematical Theoretical/Monetary/Industrial/International/Comparative Economic Systems, and Accounting.

VI. FACULTY OF MEDICINE

1. Department of Pharmacy and Pharmacology:
P/R & SL/L in Pharmacognosy/Pharmaceutics and Pharmacology.
2. Department of Anaesthesia:
P/R & L.
3. Department of Haematology and Blood Transfusion:
R & SL/L in Haematology.
4. Department of Obstetrics and Gynaecology:
R & SL/L.
5. Department of Medicine and Psychiatry:
SL/L in Neurology/Clinical Pathology/Development and Assessment of Teaching Methods/Cardiovascular and Respiratory Laboratory.
6. Department of Pathology (Morbid Anatomy):
L.
7. Department of Physiology:
P & SL/L.
8. Department of Radiology:
P & SL/L.

VII. FACULTY OF SCIENCE

1. Department of Mathematics:
P/R & L.
2. Department of Microbiology:
P/R & SL/L.
3. Department of Physics:
SL & L in Nuclear Physics/Solid-State Physics, Applied Geophysics/Atmospheric Physics, Geomagnetism/Electronics, Instrument Technology or Acoustics.
4. Department of Biochemistry:
SL/L.
5. Department of Chemistry and Industrial Chemistry:
SL/L in Industrial, Analytical, Inorganic and Organic Chemistry.

VIII. QUALIFICATIONS

Candidates are required to possess the following qualifications:—
(a) Professor: Higher degree in relevant field, preferably a Ph.D. Several years of teaching, research or professional experience in a University or comparable institution accompanied by adequate scholarly publications. Ability to initiate and develop research projects and to supervise post-graduate research programmes. Some administrative experience.
(b) Senior Lecturer: Sound academic qualifications, preferably with a Ph.D. Not less than five years of teaching, research or equivalent professional experience in a University or comparable institution. Ability to initiate and develop research projects, accompanied by scholarly publications.
(c) Lecturer I and II: Sound academic or equivalent qualifications preferably with a higher degree. Level of appointment will depend on teaching or research experience in a University or comparable institution.
(d) Director: A good honours degree with extensive administrative experience in a higher institution or a corporation.

IX. SALARIES AND CONDITIONS OF SERVICE

(a) Salaries
Professor:
N11,268-N12,420 p.a. (£8,285-£9,132 sterling).
Director:
N9,996-N11,025 p.a. (£7,996-£8,822 sterling).
Reader/Principal Research Fellow:
N8,888-N9,828 p.a. (£6,520-£7,228 sterling).
Senior Lecturer/Senior Research Fellow:
N7,764-N8,724 p.a. (£5,708-£6,414 sterling).
Lecturer I/Research Fellow I:
N6,444-N8,984 p.a. (£4,788-£5,135 sterling).
Lecturer II/Research Fellow II:
N5,460-N6,432 p.a. (£4,014-£4,728 sterling).

(b) Other Conditions
Appointments may be either on fixed term normally of two years contract renewable by mutual agreement or till retiring age of sixty. Bi-annual home passages with a grant for local travel in the intervening years, car basic allowance, superannuation or gratuity, subsidised accommodation.

Method of Application

Applications should contain the following information:
Full Name, Date and Place of Birth, Nationality and Postal Address (Current). Post for which application is being made. (Faculty/Department/Institute/Unit).
Marital Status, Number and Ages of Children, Present Occupation.
Academic/Professional Background (with qualifications and experience). Posts held, duration and salary.
Passport No. (where and when issued) if applicable.
Research and Publications (copies to be supplied if available).
Names and addresses of THREE referees.
Two copies of the application should be forwarded to:
The Registrar,
Ahmadu Bello University,
Zaria—North Central State,
NIGERIA.

Applicants resident in the U.K. should also send one copy to the Inter-University Council, 30/31 Tottenham Court Road, London W1P 0DT, from whom further particulars are available.
Closing date: 30 April, 1976.

Universities continued

UNIVERSITY OF SUSSEX

LECTURESHIPS IN THE HUMANITIES AND SOCIAL SCIENCES from 1st October 1976
LECTURESHIPS, NORMAL TENURE

History & Theory of Art

In the School of English and American Studies, Preference will be given to candidates qualified to teach post-medieval European art and architecture. The person appointed will also be expected to participate in teaching an interdisciplinary course, Art and Letters in Britain, 1940-1930.

English

One post in the School of Cultural and Community Studies, for which an interest in exploring the relationship between literature and the social sciences would be an advantage. One or two posts in the School of English and American Studies; an interest in the 20th Century would be, and in medieval literature may be, an advantage.

Human Geography

In the School of Social Sciences.

International Relations

In the School of African and Asian Studies. A special interest in the economic aspects of international relations would be an advantage.

Social Anthropology

In the School of African and Asian Studies. Applicants should have research experience in South Asia, and be able to offer expertise in the fields of kinship and conceptual systems.

Sociology

In the School of Cultural and Community Studies. The holder of this post will share in the teaching of research methods and of the social structure of industrial societies, and will also contribute to other courses; specialized interests in any field will be considered.

Initial salaries will be within the range £3,174 to £3,582 per annum on the Lecturer scale (£3,174 to £3,446 per annum) plus £880/US\$ where appropriate.

Further particulars for each post and application forms, returnable by 27th April, 1976, are available from: Establishment Section, Office of Arts and Social Studies, Arts Building, University of Sussex, Brighton BN1 9QN (telex 66755, extension 100, New Holland), quoting the title of the post and reference 475/3.

CO WESTMEATH VOCATIONAL
EDUCATION COMMITTEE
ATHLONE REGIONAL TECHNICAL COLLEGE
LECTURERS/ASSISTANT
LECTURER REQUIRED

Applications are invited for the following permanent, full-time, salaried posts:
Lecturer Scale 1—Plastics Engineering or Plastics Technology
Athlone College is one of the Regional Technical Colleges recently established in Ireland and is one of the main centres for technical and technological education in Plastics Engineering. The College offers a range of programmes including one leading to Graduate status in Plastics Engineering. The Lecturer Scale 1—Plastics Engineering route, Lecturer Scale 2—Mechanical Engineering, (Preference may be given to candidates, otherwise suitably qualified, who have appropriate experience in production processes).
Lecturer Scale 1/Assistant Lecturer—Agricultural Engineering (Farm Buildings).
Lecturer Scale 1
Lecturer Scale 1
Women and Single Men—£4,411-£5,858
Married Men—£4,664-£6,384
Assistant Lecturer:
Women and Single Men—£3,985-£5,382
Married Men—£4,041-£5,760
Children's Allowances are payable where applicable.
The number of increments which may be awarded for previous experience is normally a maximum of five.
Qualifications and Conditions of Service in accordance with Memo V7 Department of Education.
Interview and re-location grants may be available.
Application forms and further information may be obtained from:
Michael Geachagan,
National Manpower Service,
Customs House,
Athlone, Co. Westmeath, IRELAND.
(Tel: 0902 2408)
The latest date for receipt of completed application forms is Tuesday, 27th April, 1976.

ST. HUGH'S COLLEGE, OXFORD
Lectureship
in Politics

Applications invited for Lectureship in Politics from 1st October, 1976
Appointment open to men and women
Further details from the Principal
Applications to be received by 24th April

UNIVERSITY OF DAR ES SALAAM
TANZANIA

Applications are invited for the following posts on the

DEPARTMENT OF MANAGEMENT AND
ADMINISTRATION

1. ASSOCIATE PROFESSOR IN FINANCIAL
MANAGEMENT

Candidates must possess a doctorate in Business Administration specializing in Financial Management. They must have several years teaching experience at University level or equivalent institution. Consideration will be given to candidates with specialization in Marketing Management, Market Research, Price Formation, and Export-Import Marketing.

2. ASSOCIATE PROFESSOR IN MARKETING
MANAGEMENT

Candidates must possess a Ph.D. in Business Administration. They must have several years teaching experience at University level or equivalent institution. Consideration will be given to candidates with specialization in Principles of Management and Administration, and organizational Behaviour and Administrative Functions in Management.

3. SENIOR LECTURER IN MANAGEMENT

Candidates must possess a Ph.D. in Business Administration. They must have several years teaching experience at University level or equivalent institution. Consideration will be given to candidates with specialization in Principles of Management and Administration, and organizational Behaviour and Administrative Functions in Management.

4. LECTURER IN MANAGEMENT & ADMINISTRATION

Candidates must have a Ph.D. or M.B.A. in Business Administration and should have teaching experience at University level or equivalent institution. Consideration will be given to candidates with specialization in the following areas:

- (a) Commercial and Labour Law and Legal Aspects of International Trade and Investments.
- (b) Accounting—Computer and Systems Analysis and Taxation
- (c) Commerce.

Salary Scale: Associate Professor, T23,082-T23,472 per annum. Senior Lecturer, T22,711-T23,082 per annum. Lecturer, T22,150-T22,711 per annum. (T22,150 is for married couples). The Tanzanian Government may supplement salaries in range T22,082-T23,024 per annum (sterling) for married appointees (normally) and T22,082-T23,024 per annum (sterling) for single appointees (normally). Detailed applications (3 copies) for married appointees and 3 references should be sent by post, not later than 3rd May, 1976, to the Chief Academic Officer, University of Dar es Salaam, P.O. Box 35091, Dar es Salaam. Applicants should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further particulars may be obtained from either address.

UNIVERSITY OF MALAWI
BUNDA COLLEGE OF AGRICULTURE

Applications are invited for the following posts, tenable from 1 September, 1976:

1. LECTURER IN AGRICULTURAL ENGINEERING

Applicants should have a good first degree in Agricultural Engineering and postgraduate qualifications and experience in Plant Breeding and Genetics. Duties of the post include teaching plant breeding and genetics and assisting in the national crops research programme.

2. LECTURER IN PLANT BREEDING

Candidates should have a good first degree in Agriculture or Botany with postgraduate qualifications and experience in Plant Breeding and Genetics. Duties of the post include teaching plant breeding and genetics and assisting in the national crops research programme.

3. LECTURER IN AGRICULTURAL CHEMISTRY

Applicants should have a M.Sc. or Ph.D. in Chemistry. Experience would be an advantage. Duties of the post include teaching basic Chemistry to agricultural students.

4. LECTURER IN ANIMAL NUTRITION

Applicants should have a good first degree in Agriculture or Agricultural Chemistry with postgraduate qualifications and experience in Animal Nutrition. Duties of the post include teaching animal nutrition and developing practical development-oriented research in Animal Nutrition.

5. LECTURER IN HOME ECONOMICS

Candidates should have a degree in Home Economics or Home Economics Education, preferably with advanced training and/or experience in home economics education for rural areas. Field experience in a developing country is desirable. Duties of the post include teaching home economics and assisting in the national crops research programme.

Salary Scale (including expatriate addition): £2,808-£4,714 p.a. (sterling) plus £1,212 p.a. (taxable in Malawi). The British Government may supplement salary in range £2,808-£4,714 p.a. (sterling) for married appointees or £2,808-£4,714 p.a. (sterling) for single appointees (normally) and £2,808-£4,714 p.a. (sterling) for single appointees (normally). Detailed applications (3 copies) for married appointees and 3 references should be sent by post, not later than 3rd May, 1976, to the Chief Academic Officer, University of Malawi, P.O. Box 278, Zomba, Malawi. Applicants should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further particulars may be obtained from either address.

UNIVERSITY OF CAPE TOWN
LECTURESHP IN ENGLISH

Applications are invited for the above post, vacant as from 1st January, 1977. Appointment, according to the University of Cape Town, will be made on the salary scale R3,000 to R3,200 p.a. There are opportunities for the department to teach the novel, short story, and drama. Preference will be given to persons with a postgraduate qualification in English literature. An additional recommendation would be the ability to teach in one or more of the fields: Old English, Middle English, Development of the Language.

Applicants should submit a curriculum vitae, stating present salary, the terms and conditions of their contract, and a list of references. A detailed application (two copies), including a curriculum vitae and a list of references, should be sent by post, not later than 27 April, 1976, to the Registrar, University of Cape Town, Office, P.O. Box 278, Zomba, Malawi. Applicants should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further particulars may be obtained from either address.

Applicants should submit a curriculum vitae, stating present salary, the terms and conditions of their contract, and a list of references. A detailed application (two copies), including a curriculum vitae and a list of references, should be sent by post, not later than 27 April, 1976, to the Registrar, University of Cape Town, Office, P.O. Box 278, Zomba, Malawi. Applicants should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further particulars may be obtained from either address.

UNIVERSITY OF
THE WEST INDIES
BARBADOS

Applications are invited for the following posts on the

LECTURER IN THE
TEACHING OF SCIENCE
IN THE IN-SERVICE
EDUCATION
PROGRAMME

The ability to assist with the most advanced and modern methods of educational technology would be an asset. The appointee will be expected to assume duty by 1st August, 1976.

Salary Scale (as from 1st August 1976):

Senior Lecturer, T23,082-T23,472 per annum. Lecturer, T22,150-T22,711 p.a. (C1 sterling). F.S.U. Unfurnished accommodation will be provided for the duration of the appointment. The University will be responsible for the cost of the appointee's travel and subsistence while on duty.

3. SENIOR LECTURER IN MANAGEMENT

Candidates must possess a Ph.D. in Business Administration. They must have several years teaching experience at University level or equivalent institution. Consideration will be given to candidates with specialization in Principles of Management and Administration, and organizational Behaviour and Administrative Functions in Management.

4. LECTURER IN MANAGEMENT & ADMINISTRATION

Candidates must have a Ph.D. or M.B.A. in Business Administration and should have teaching experience at University level or equivalent institution. Consideration will be given to candidates with specialization in the following areas:

- (a) Commercial and Labour Law and Legal Aspects of International Trade and Investments.
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AUSIA

MONASH UNIVERSITY
CHAIR OF ECONOMICS
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continued

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CHAIR OF ECONOMICS
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- (b) Accounting—Computer and Systems Analysis and Taxation
- (c) Commerce.

Salary Scale: Associate Professor, T23,082-T23,472 per annum. Senior Lecturer, T22,711-T23,082 per annum. Lecturer, T22,150-T22,711 p.a. (C1 sterling). F.S.U. Unfurnished accommodation will be provided for the duration of the appointment. The University will be responsible for the cost of the appointee's travel and subsistence while on duty.

UNIVERSITY OF THE WEST INDIES
BARBADOS

Applications are invited for the following posts on the

LECTURER IN THE
TEACHING OF SCIENCE
IN THE IN-SERVICE
EDUCATION
PROGRAMME

The ability to assist with the most advanced and modern methods of educational technology would be an asset. The appointee will be expected to assume duty by 1st August, 1976.

Salary Scale (as from 1st August 1976):

Senior Lecturer, T23,082-T23,472 per annum. Lecturer, T22,150-T22,711 p.a. (C1 sterling). F.S.U. Unfurnished accommodation will be provided for the duration of the appointment. The University will be responsible for the cost of the appointee's travel and subsistence while on duty.

3. SENIOR LECTURER IN MANAGEMENT

Candidates must possess a Ph.D. in Business Administration. They must have several years teaching experience at University level or equivalent institution. Consideration will be given to candidates with specialization in Principles of Management and Administration, and organizational Behaviour and Administrative Functions in Management.

BRIGHTON POLYTECHNIC

Head of Department of Community Studies

Grade V, £7,395-£8,271.

The new department arises from the merger of the Polytechnic with the Brighton College of Education. Ability to play a leading role in the development of degree and professional courses in social work and community studies is essential. The department will also be responsible for editing courses for health visitors and main-subject sociology students in the Faculty of Education Studies. Applicants should have good academic qualifications and professional experience in social community work.

Further particulars and application forms (please quote Ref. 81/4) obtainable from the Bursar, Brighton Polytechnic, Moulesmead, Brighton BN2 4GJ. Tel 0273 87304. Closing date 23rd April, 1978.

ULSTER COLLEGE THE NORTHERN IRELAND POLYTECHNIC

School of Health Sciences

Principal Lecturer or Senior Lecturer— Occupational Therapy

To co-ordinate and develop the existing Occupational Therapy Diploma Course and new courses in Occupational Therapy.

Lecturer II—Occupational Therapy

To teach on the Occupational Therapy Diploma Course.

SALARY SCALES:
Principal Lecturer — £9,252-£9,964/£7,890
Senior Lecturer — £8,343-£8,267/£7,228
Lecturer II — £8,591-£8,805
(subject to confirmation)

There is a scheme of assistance with removal expenses.

Further particulars and application forms which must be returned by April 20th, may be obtained by telephoning Whiteabbey (0281) 65131, ext. 2243, or by writing to: The Establishment Officer, Ulster College, The Northern Ireland Polytechnic, Jordanstown, Newtownabbey, Co. Antrim BT37 0QB, Northern Ireland.

The POLYTECHNIC WOLVERHAMPTON

Vacancies for September

Principal Lecturers:

(£6,252 to £6,954 or £7,890)
Marketing
Accounting (Public Sector)

Senior Lecturer:

(£5,343 to £5,267 or £6,729)
Management Studies

Lecturers Grade II:

(£4,591 to £5,005)
Industrial Relations
Accounting
Sociology
Law (2 posts)
English (particularly Contemporary Studies)

Further details and application forms from Establishment Officer, The Polytechnic, Wolverhampton WV1 1LY

DEPARTMENT OF MATHEMATICS AND COMPUTER STUDIES

Applications are invited for the post of LECTURER IN COMPUTER STUDIES. Applicants should have a good honours degree in computer science or a related subject, and have experience in teaching computer studies at degree level. Additional qualifications or experience in statistics or operational research would be advantageous.

Salary (currently under review) on the scale £5,218-£5,012 (plus 10% super) will initially be dependent upon previous experience.

Further particulars and application forms (please quote Ref. 81/4) obtainable from the Bursar, Brighton Polytechnic, Moulesmead, Brighton BN2 4GJ. Tel 0273 87304. Closing date 23rd April, 1978.

dundee college of technology

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THE HATFIELD POLYTECHNIC

SENIOR LECTURER/ LECTURER II

In Soil Mechanics and Foundation Engineering

The successful candidate must possess a good honours degree in civil engineering with a specialisation in soil mechanics and foundation engineering. The successful candidate will be responsible for the teaching of these subjects at degree level. The successful candidate will also be responsible for the supervision of students on the B.Sc. (Hons) in Civil Engineering. The successful candidate will also be responsible for the supervision of students on the B.Sc. (Hons) in Civil Engineering.

Further details and application forms (please quote Ref. 81/4) obtainable from the Bursar, Brighton Polytechnic, Moulesmead, Brighton BN2 4GJ. Tel 0273 87304. Closing date 23rd April, 1978.

PLYMOUTH POLYTECHNIC

Learning Resources Centre

INFORMATION OFFICER

Salary £3,278-£3,493

Lecturer Grade II Scale

It is required to share the teaching of a well-developed library instruction programme using a variety of teaching methods and media and to undertake specialist duties in the appropriate subject areas.

A genuine interest in teaching is required, together with good academic qualifications and appropriate professional experience.

The LR Centre is housed in a new building on the campus of Plymouth Polytechnic, which is ideally situated in the centre of a modern city not in an area of outstanding natural beauty.

Further particulars and application forms from the Personnel Officer, Plymouth Polytechnic, 23rd April, 1978. The appointment should commence September, 1978.

BRIGHTON POLYTECHNIC

DEPARTMENT OF CONSTRUCTION AND ENVIRONMENTAL TECHNOLOGY

PRINCIPAL LECTURER IN BUILDING TECHNOLOGY

Applications are invited for the post of Principal Lecturer in Building Technology. The successful candidate will be responsible for the teaching of these subjects at degree level. The successful candidate will also be responsible for the supervision of students on the B.Sc. (Hons) in Civil Engineering. The successful candidate will also be responsible for the supervision of students on the B.Sc. (Hons) in Civil Engineering.

Further details and application forms (please quote Ref. 81/4) obtainable from the Bursar, Brighton Polytechnic, Moulesmead, Brighton BN2 4GJ. Tel 0273 87304. Closing date 23rd April, 1978.

DEPARTMENT OF MATHEMATICS AND COMPUTER STUDIES

Applications are invited for the post of LECTURER IN COMPUTER STUDIES. Applicants should have a good honours degree in computer science or a related subject, and have experience in teaching computer studies at degree level. Additional qualifications or experience in statistics or operational research would be advantageous.

Salary (currently under review) on the scale £5,218-£5,012 (plus 10% super) will initially be dependent upon previous experience.

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THE POLYTECHNIC OF NORTH LONDON

DEPARTMENT OF HISTORY

SENIOR LECTURER/ LECTURER II

Applications are invited from qualified graduates to fill the post of Senior Lecturer in the Department of History. The successful candidate will be responsible for the teaching of these subjects at degree level. The successful candidate will also be responsible for the supervision of students on the B.Sc. (Hons) in Civil Engineering. The successful candidate will also be responsible for the supervision of students on the B.Sc. (Hons) in Civil Engineering.

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